

CALIFORNIA STATE BOARD OF HEALTH

MONTHLY BULLETIN

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MONTHLY BULLETIN

CALIFORNIA STATE BOARD OF HEALTH

Devoted to the Prevention of Sickness and Death

☐ Entered as second-class matter, August 15, 1905, at the post office at Sacramento, California, under the Act of Congress of July 16, 1894.

Sent free, on request, to any citizen of California.

WILBUR A. SAWYER, M.D., Secretary and Executive Officer . . . Editor
GUY P. JONES, Morbidity Statistician . . . Associate Editor

How Many Rats Do You Feed?

Now that we are trying to produce a maximum amount of foodstuffs to supply the needs of our allies in war, as well as our own needs, the prevention of waste in food products is a live subject. Even birth control advocates use their propaganda as an argument for the conservation of foodstuffs. But no one mentions the food depredations of rats. These rodents, besides spreading communicable diseases and causing the destruction of much property by fire, consume hundreds of thousands of dollars worth of foodstuffs in California every year. Building these rodents out and protecting foods by keeping them in rat-proof receptacles would not only be effective in disease prevention but it would also be effective in saving more food for human needs.

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Every Day a Clean-Up Day.

The newspapers are full of announcements of clean-up days, clean-up weeks and clean-up campaigns galore. The inauguration of these special efforts has given rise to considerable misinformation regarding just what is accomplished by a clean-up campaign. Some people think that hauling away a load of ashes and rubbish from the back yard will prevent typhoid fever. In order to accomplish results, clean-up campaigns must be continual and perpetual. Perhaps the greatest good that any clean-up campaign accomplishes, aside from improvement in appearances, is its work in fly eradication. Removal of tin cans is also important, since they are often favorable mosquito breeding places. It is certain that if every day were a clean-up day, health departments would make much better showings.

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Why Report Diseases?

Many a physician and many a health officer has filed reports of communicable diseases in a careless and perfunctory way because he did not see the reason for all the bother. To him the reporting of diseases was a superfluous duty imposed on a long-suffering profession in order to secure material for dry statistics in dusty files. In

this issue is an article by Mr. Jones, which shows that these reports are vital to public health work in California. They have become surprisingly useful and are being used more and more. They often save lives by pointing out where danger lurks.

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Now for Clean Swimming Pools. One of the first bills signed by the governor was that pertaining to the sanitation of swimming pools. Already applications for permits are coming in and the Bureau of Sanitary Engineering is making plans for the enforcement of the rules and regulations which the State Board of Health shall adopt for conducting such places. We have no data that would indicate the number of cases of communicable disease that may have been contracted in public swimming pools, but we do know that many cases of skin disease have been contracted in such places through the use of towels improperly cleaned. The new law will permit the enforcement of rules for the personal hygiene of individuals entering public swimming places. Perhaps this will have as far-reaching effect in keeping these places clean, as any measure that may be adopted.

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Increased Rice Production Affects Malaria Problems. The acreage planted to rice in California this year is said to be twice that of 1916. This will double the problem of mosquito and malaria control in the rice fields and will provide a rich realm for investigation into methods of control. The need of discovering adequate means for eradicating mosquitoes from the rice fields of California grows each year and the malaria problem in the interior valleys of the state does not diminish. Since the most favorable conditions for the production of rice and for the breeding of malaria-bearing mosquitoes are identical, the problem in the rice fields is difficult. In other communities, the control of mosquitoes is easily accomplished. The eradication of malaria in the average community depends largely upon public opinion and the progressiveness of its citizens.

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Malaria and Food Supply. Patriotism and high prices have combined to induce the farmer to secure a maximum output of food for man and beast. Land, water and labor are all necessary for large crops. Labor is essential and must be conserved. In certain regions the shortage of labor can be diminished by malaria control. Malaria, essentially a rural disease, cuts down the efficiency of the workingman on many California ranches, and often drives him away. A little attention to drainage and oiling will protect health on the farm and increase production.

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Health Officers, Be Patriotic—Report Promptly. In order to keep a close check upon the status of communicable diseases in California, it has become necessary for the State Board of Health to issue a weekly summary, showing where the communicable diseases are most prevalent. In these days, information of this sort must be ready at a moment's notice. Physicians and health officers can not show their patriotism more strongly than by promptly reporting cases of communicable disease.

If every health officer in the state will send his report regularly every Saturday night, he will not only be doing his duty as a health officer, but he will also render a distinct service to the state and to the country.

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**Typhoid Fever at
Low Ebb Now.**

Typhoid fever is at its low ebb this season of the year. During one week of April there were but eight cases of the disease reported in California. Perhaps the time may come when eight cases of this disease will be the maximum number reported during any week of the year, but that is not the present time. In spite of the notable decrease in typhoid mortality in California there is much work to be done in the improvement of water supplies and sewage disposal, and still more to be done in the correction of local conditions that have to do with typhoid. The danger from open toilets and flies, especially in the rural districts, must not be forgotten.

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**Keeping Well Is
"Doing One's Bit."**

There are many ways of "doing one's bit," but it is doubtful if in the present emergency, anything could be of more importance than strictly obeying the rules of personal hygiene and aiding in every possible way in safeguarding the public health. Health is of the greatest importance in times of peace, and in time of war nothing counts for more than health. It is the first duty of each and every citizen to keep himself in fighting trim.

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**Hay Fever in California
Receives Deserved Attention.**

The study of hay fever in California is in its infancy, but a formidable start in the classification of hay fever weeds has been made. The fact that hay fever is generally due to pollen from the inconspicuous bloom of weeds along roadsides and in vacant lots should be of value in the prevention of the disease. It would appear that the gaudy, highly-colored flowers are not often causative factors in hay fever, because their pollen is heavy and is generally insect-borne rather than wind-borne. As soon as complete classifications of hay fever weeds in California are made, there should be definite, active work in the adoption of preventive measures.

MORBIDITY REGISTRATION IN CALIFORNIA.

GUY P. JONES, Morbidity Statistician.

There is a constant interchange of cases of communicable disease between cities, counties and states. This is especially true of typhoid fever and tuberculosis cases, but it applies to cases of all the communicable diseases. Every city, every county and every state receives such patients from other cities, other counties or other states. Cities with hospital facilities invariably receive cases of typhoid fever and other communicable diseases from the surrounding rural districts and from other cities or other states. Cases of tuberculosis, as well as other diseases, are often sent from the cities to the rural districts. The elaborate hospital facilities in the metropolis bring patients from smaller cities and from the rural districts also.

An institution for the treatment of tuberculosis or other communicable diseases, although it may be in an out-of-the-way hamlet, may achieve a world-wide reputation, bringing patients not only from other states but from other countries. The climate in one section of the country may bring health-seeking patients from every part of the world. Such migrations will continue as long as there are transportation facilities and institutions for the treatment of disease, and as long as certain states are able to present advantages of climate.

Residents and Nonresidents.

Strange to relate, little effort is made to differentiate between cases of communicable disease contracted locally and cases of such disease originating elsewhere. In most places, no attempt is made to determine what the death rate or rate of sickness of the city or county may be if the deaths of nonresidents or imported cases of communicable disease are excluded from morbidity and mortality statistics. It is hardly fair to the city, county or state to which these imported cases come, that no distinction is made in either morbidity or mortality rates between cases of communicable disease originating locally and those that are imported.

There is one health officer of a manufacturing city in California, however, who is overzealous in making such a distinction. His zeal was called to the attention of the California State Board of Health by the health officer of a college town, which, due partly to the activity of the health officer, has a remarkably low death rate. An investigation of the method of computing mortality rates as used by the health officer of the manufacturing town showed that fully half of the deaths occurring there did not enter into the mortality statistics. In fact, it appeared that it was necessary for a person to live several years in this city before he was classed by the health officer as a resident. Of course, in this instance the method of computing the death rate was manifestly unfair.

Many Imported Cases.

About half of the typhoid fever cases reported from San Francisco and Los Angeles are in persons who contract the disease outside of those cities. The same is true in Sacramento and in other cities of the state located in or adjacent to territory in which typhoid fever is known to be endemic. Chinese from all parts of California flock to the headquarters of their various tongs in San Francisco as soon as they have reached the last stages of tuberculosis. Sending cases of tuberculosis

Weekly report blank for cases of local origin, as supplied to the 300 city and county health officers of California, by the State Board of Health. These blanks, printed on white paper, are filed alphabetically by counties, signals of different colors being placed over the figures at the top of the blank, each of which refers to one of the more important of the reportable diseases. The general prevalence of any one of such diseases, in any of the 58 counties of the state, may thus be learned at a glance, by noting the predominance of a given color.

REPORTABLE DISEASES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
	<div style="text-align: center;"> WEEKLY REPORT OF COMMUNICABLE DISEASES RETURN TO CALIFORNIA STATE BOARD OF HEALTH, SACRAMENTO MAR 8 1 1917 CITY OR COUNTY----- FOR REPORTING CASES ORIGINATING ELSEWHERE----- WEEK ENDING----- </div>																	
	Disease	Date of Onset	Name of Patient	Age	Location	Attending Physician	Probable Source of Infection											
Anthrax																		
Beri-beri																		
Cerebrospinal Meningitis (Epidemic)																		
Cholera, Asiatic																		
Dengue																		
Diphtheria*																		
Dysentery																		
Erysipelas																		
German Measles																		
Glanders																		
Gonococcus Infection																		
Hookworm																		
Leprosy																		
Malaria																		
Measles																		
Mumps																		
Ophthalmia																		
Neonatorum*																		
Pellagra																		
Plague																		
Pneumonia																		
Poliomyelitis*																		
Rabies																		
Scarlet Fever																		
Smallpox*																		
Syphilis																		
Tetanus																		
Trachoma																		
Tuberculosis*																		
Typhoid Fever*																		
Typhus Fever																		
Whooping-cough																		
Yellow Fever																		

Diseases underlined in heavy type are quarantinable. Under "Location" give address in cities and exact location in rural districts, e. g., "Smith Ranch, 2 miles west of Sacramento," not "R. F. D. No. 1, Sacramento."

Use pink cards for cases outside your jurisdiction. STARS INDICATE ADDITIONAL INFORMATION REQUIRED ON BACK OF THIS SHEET.

*Poliomyelitis is quarantinable by regulation of the State Board of Health.

27240-12-11-16-5M

(Signature)-----

Health Officer

Weekly report blank for cases originating outside of the territory under the jurisdiction of the health officer. This blank, which is printed on pink paper, is filed in the same manner as the blanks for reporting cases of local origin, such file being of a distinctly "follow-up" nature, for determining the status of the disease at the supposed place of origin.

to the rural districts of counties lying close by is a common practice in the larger cities. Many tuberculosis patients wander from county to county in their constant search for health.

The interchange of these cases between cities and the rural districts, as well as between states, is constant, and, with the continual improvement in facilities for transportation, may be increased. The California State Board of Health has been very much impressed with the effect that these migrations have upon the morbidity and mortality rates of the various cities and counties of California.

The California Plan.

Accordingly, the board has adopted a plan for learning of all cases of communicable disease that may be imported into any city or county of California. By securing this information, it is possible to establish corrected rates for the various cities and counties. The plan in brief is as follows:

The three hundred health officers in California, in their weekly reports of communicable disease, upon the blank forms as illustrated herewith, are required to distinguish between cases of communicable disease originating in the territory under their jurisdiction and such cases originating elsewhere. A blank form of special color is used for reporting these imported cases. By securing such reports, the State Board of Health is able to act as a clearing house for the dissemination of valuable information in the control of disease. If several reports of such cases coming from the same location are received by the State Board of Health, it indicates that there is a definite focus of infection at that location. Several reports of cases of typhoid fever brought into a city from a construction camp in a rural district may give the clue to unusual conditions at such camp, and the State Board of Health is able to adopt immediate measures for the sanitary inspection of the camp, and epidemiological work, if necessary, for the correction of any conditions that may have to do with the spread of the disease. An instance of this is shown in an epidemic of typhoid fever in the west side oil fields, Taft and Maricopa, Kern County, last summer, when 112 cases of typhoid fever were reported.

Epidemic in the Oil Fields.

A great many of the patients went to Bakersfield for medical treatment as soon as they became sick, because of a lack of hospital facilities in the oil fields. Many others journeyed to more distant places. In fact, the first definite information relative to this epidemic was received from health officers of cities throughout the state, who reported that typhoid fever patients from the oil fields were coming into their cities. This led to an investigation of conditions at Taft and Maricopa. Besides patients who went to Bakersfield, others went to the following cities: Los Angeles, Long Beach, Oakland, Arroyo Grande, Redondo Beach, San Francisco, Oxnard, Santa Monica, Fresno, Richmond, Pasadena, Berkeley, San Luis Obispo and Santa Cruz. One patient went to Nevada and one went east, his destination not having been determined. In some instances the California State Board of Health was able to supply the health officers of California cities with information that typhoid patients from the oil fields had come into the territory under their jurisdiction, enabling steps for the prevention of contact infection to be taken. The chief value of reciprocal notification in this

ADDITIONAL INFORMATION

GIVE INITIALS OR NAME OF EACH CASE FOR IDENTIFICATION

DIPHTHERIA—What was bacteriological diagnosis?-----

SMALLPOX—Was patient vaccinated?-----

When?-----

POLIOMYELITIS—The special government blank will be sent.

TUBERCULOSIS—Fill out and return the special data card of the State Board of Health.

OPHTHALMIA NEONATORUM—Date of birth-----

TYPHOID FEVER—Give as nearly as possible the location of each patient at the time that he contracted his infection, and the probable source of his infection-----

In every case of death from a reportable disease, where a previous report has not been made, a morbidity report must be supplied in the Weekly Report of Communicable Diseases.

REPORT BY TELEGRAPH any cases of PLAGUE, ASIATIC CHOLERA, YELLOW FEVER or TYPHUS FEVER.

10-6

DR. THOMAS T. MADDEN,
SANGER, CAL.

The reverse side is identical for both blank forms. Only such data as are absolutely necessary with the first report of a case of communicable disease, are asked for. The health officer's name, address and filing number are printed upon the blank by means of an addressing machine. The first figure of the filing number is that assigned to the county—the second figure is that assigned to the city, reports from incorporated cities being filed with those for the county in which they are located.

case, however, came through the reports received from health officers scattered throughout the state, showing that typhoid patients from the oil fields were coming into their cities. This provided the clue to the existence of the extensive outbreak and prompted the investigation.

Simplicity of First Importance.

Morbidity reporting should be made as simple as possible and the blank forms used by the California State Board of Health require a maximum amount of desired information at a minimum effort upon the part of physician and health officer. Since morbidity reports find their chief value in the moment only, their prompt receipt from health officers is of great importance. If a large amount of information is required in the original report of a case, there will be a corresponding delay in forwarding it to the State Board of Health. It is not necessary that detailed information be submitted with the first report. It may be valuable, indispensable in fact, during investigations that may necessarily follow, but it is a waste of effort to supply a quantity of material which will not be used with the first report of a case of communicable disease. It is essential, however, that all general data available, relative to possible location of the source of infection, accompany the original report. Unless such information is submitted originally, the report is of little use except to indicate the mere presence of the disease.

It will be noted that in reporting a case of typhoid fever to the California State Board of Health, aside from the date of onset, name, age, and attending physician, the board requires only that as nearly as possible the location of each patient at the time he contracted his infection and the probable source of infection, be supplied. The board does not require information relative to Widal reactions. It does not ask any of the thousand and one questions that too often are required by boards of health with first reports of cases of typhoid fever. This detail belongs to the epidemiological work that may be required later. The first thing is to find the outbreak. After the first cases originating at a common focus are discovered, there is generally plenty of time for an investigation and for the adoption of control measures.

Morbidity Statistics an Index.

Morbidity statistics should simply serve as an index to the presence of communicable disease and should blaze the trail for detailed investigations. Too many health departments unnecessarily go to the extremes in requiring detailed epidemiological data for each case of communicable disease when it is first reported. It has been found in California that this plan of learning whence cases of communicable disease may come is useful in breaking up an epidemic of typhoid fever before it assumes large proportions. For instance, a case of typhoid was recently reported by the health officer of Sacramento, who reported that the patient came from a mining camp in Shasta County. Upon taking the matter up with the Shasta health officers, it was found that a small-sized epidemic of typhoid was being fought, unknown to the California State Board of Health. Investigation showed an infected water supply responsible for the epidemic. Steps were immediately

taken to correct this condition and the epidemic died out, not more than six cases having occurred. Had the Sacramento health officer not determined that the Sacramento case came from Shasta County, there might have been hundreds of cases of typhoid in this mining camp.

A Smallpox Outbreak.

Another instance of the value of learning of the recent travels of patients suffering from communicable disease is shown in the following: The health officer of Stanislaus County reported a case of smallpox in the person of a young man who had just arrived from a small town in Mendocino County, many miles from a railroad, but which is an important travel center for the reason that it is an overnight stopping place for the stage lines running between Ukiah and Eureka. The patient informed the Stanislaus County health officer that many persons in Mendocino County were suffering from a disease characterized by a skin eruption. The State Board of Health asked the health officer of Mendocino County to investigate. Upon his arrival at the town, the first man to greet him had pustules as big as beans upon his face. He was the owner of one of the hotels and was doing business the same as usual. The postmaster's child and the public telephone operator both had smallpox, as well as the stage drivers. In the barber shop, two persons with well developed cases were watching a game of chess. The townspeople were to have a dance that night, but the health officer refused to permit it. School children were vaccinated and the outbreak was successfully checked. There were between fifty and sixty known cases in this outbreak, and it might have been much more extensive had not the health officer of Stanislaus County informed the State Board of Health that a smallpox patient in his territory had recently arrived from Mendocino County.

How Nonresidence Affects Death Rates.

An analysis of the records of death from typhoid fever in California during 1916 shows the importance of distinguishing between cases of this disease that are contracted locally and those that are contracted in outside territory. From the accompanying table, it will be noted that out of 208 fatal cases of typhoid fever in 1916, 34 were in persons who contracted the disease away from the place in which they died. While the rates per hundred thousand population are not to be considered seriously for some of the counties having low populations, the table indicates the advantage in correcting death rates according to the place in which fatal cases of communicable disease were contracted.

It will be noted that in Lake County there was but one death from typhoid fever in 1916, and that in a person who contracted the disease elsewhere. Two fatal cases of typhoid fever occurred, however, in persons in other counties but who contracted the disease in Lake County. By crediting these two typhoid cases to Lake County, its typhoid death rate for the year is exactly doubled. There were sixteen deaths from typhoid fever in San Francisco during 1916, nine of which were contracted locally. On the basis of the sixteen fatal cases, the typhoid death rate per hundred thousand population for 1916 in San Francisco is 3.5. Basing the computation upon the nine cases contracted locally, the same is but 1.9 per hundred thousand population. The typhoid

death rate in Sacramento, Alameda and other counties of the state to which typhoid fever patients migrate are considerably reduced by crediting fatal cases to the county whence they came. By following this procedure in computing the typhoid death rates of other counties, their rates are materially increased. In Fresno County, for example, there were 12 deaths from typhoid fever in 1916, all of which were contracted locally. In addition, there were three deaths from this disease which occurred elsewhere but which were contracted in Fresno County. This makes a total of 15 deaths for the year credited to Fresno County, making its rate 15.1 per hundred thousand population instead of 11.6 per hundred thousand population, which it would be if the three fatal cases occurring elsewhere were not used in computing the rate. Similar increases may be noted for Orange, Plumas, San Benito, San Bernardino, San Joaquin, San Mateo, Santa Cruz and Sonoma counties, the rates in themselves not to be taken too seriously, because of the low population of some counties.

Eight out of the 208 fatal cases of typhoid in California during 1916 were contracted in other states, two were contracted on the Sacramento River, two on shipboard, and five of these fatal cases were in persons who wandered from place to place throughout the state.

Ninety-one typhoid fever deaths in California in 1916 occurred in 19 freeholders' charter cities. Sixty-six of this number were contracted locally and 25 were contracted elsewhere. That typhoid fever is a rural disease is emphasized in the fact that but five of these 25 fatal cases were contracted in cities other than those in which the disease occurred, the remaining 20 having been contracted in the rural districts of various counties, other states, etc. By segregating the deaths in cases contracted locally from those contracted elsewhere, San Francisco, Berkeley, Oakland, Sacramento, Modesto, Los Angeles, Long Beach and Pasadena are shown to have lower corrected typhoid death rates than actual rates for 1916. Fresno and San Bernardino have higher corrected death rates and the rates remain unchanged for Petaluma, Santa Rosa, San Jose, Stockton, Pomona, Redlands, Riverside and Santa Barbara.

Work With Other States.

In addition to intrastate reciprocity in the reporting of cases of communicable disease, the California State Board of Health engages in interstate reciprocity, and during the past year, cases of typhoid fever in California, that undoubtedly found their sources of infection in the states hereafter named, have been referred to the health authorities in such states. Among these are Minnesota, Idaho, Washington, Oregon, Utah, Nevada, Montana, Colorado, New Mexico, Arizona, Texas, Ohio, North Carolina, Arkansas, Oklahoma and Wisconsin. Reciprocity with the Minnesota State Board of Health, through Dr. A. J. Chesley, Director of that board's Division of Preventable Diseases, has been more extensive than with other states for the reason that Minnesota is very active in this sort of work, pursuing the policy of reciprocal notification consistently. An example of this cooperative work with the Minnesota State Board of Health is shown in the following histories:

The health officer at Los Angeles reported three cases of typhoid fever, adding the information that a relative who had typhoid in

TABLE A. Showing How Nonresidence Affects County Typhoid Death Rates.

County	Total number of typhoid deaths, 1916	Deaths in cases contracted locally	Deaths in cases contracted elsewhere	Deaths elsewhere, contracted locally	Total number deaths in cases infected locally	Typhoid death rate per 100,000 population	Corrected typhoid death rate per 100,000 population
California -----	208						
Alameda -----	22	16	6		16	6.9	5.0
Alpine -----							
Amador -----	3	3			3	33.0	
Butte -----	4	3	1		3	11.9	8.9
Calaveras -----							
Colusa -----							
Contra Costa -----	4	4			4	9.6	
Del Norte -----							
El Dorado -----	1	1			1	13.3	
Fresno -----	12	12		3	15	11.6	15.1
Glenn -----	1	1				11.1	
Humboldt -----				1	1		2.6
Imperial -----	8	6	2		6	44.0	33.0
Inyo -----	1	1			1	11.3	
Kern -----	9	9			9	16.9	
Kings -----	2	2			2	9.6	
Lake -----	1		1	2	2	18.0	36.2
Lassen -----							
Los Angeles (city and county) -----	32	25	7	1	26	4.5	3.6
Madera -----	1	1			1	10.4	
Marin -----							
Mariposa -----							
Mendocino -----	1		1			3.8	
Merced -----							
Modoc -----							
Mono -----							
Monterey -----	1	1			1	3.7	
Napa -----							
Nevada -----	1		1			6.7	
Orange -----	4	4		2	6	9.2	13.7
Placer -----							
Plumas -----	1	1		1	2	17.7	35.5
Riverside -----	7	7			7	15.5	
Sacramento -----	7	3	4		3	8.6	3.7
San Benito -----	1	1		1	2	11.2	22.4
San Bernardino -----	8	8		1	9	10.7	12.0
San Diego -----	6	5	1	1	6	7.3	6.1
San Francisco -----	16	9	7		9	3.5	1.9
San Joaquin -----	9	9		1	10	14.9	16.6
San Luis Obispo -----	4	4			4	19.0	
San Mateo -----	2	2		1	3	5.6	8.4
Santa Barbara -----	6	6			6	18.0	
Santa Clara -----	6	5	1		5	6.1	5.1
Santa Cruz -----	1	1		1	2	3.4	6.9
Shasta -----	5	5			5	25.1	
Sierra -----							
Siskiyou -----				1	1		5.0
Solano -----	1	1			1	3.4	
Sonoma -----	5	5		1	6	9.2	11.0
Stanislaus -----	2	2			2	6.5	
Sutter -----							
Tehama -----	3	2	1		2	25.7	17.2
Trinity -----							
Tulare -----	3	3			3	6.5	
Tuolumne -----	2	2			2	20.0	
Ventura -----	1	1			1	4.8	
Yolo -----	2	1	1		1	15.0	7.1
Yuba -----	2	2		1	3	18.3	
Other states and countries -----				6			
On river steamers and at sea -----				4			
At large -----				5			
Totals -----	208		34	34			

TABLE B. Showing How Nonresidence Affects City Typhoid Death Rates.

City	Number of typhoid deaths, 1916	Number deaths in cases con- tracted locally	Number deaths in cases con- tracted else- where	Deaths else- where, cases con- tracted locally	Total deaths in cases con- tracted locally	Typhoid death rate per 100,000 popula- tion	Corrected typhoid death rate per 100,000 popula- tion
Northern California—							
Eureka -----							
Napa -----							
Petaluma -----	2	2			2	28.0	
Santa Rosa -----	2	2			2	23.4	
Grass Valley -----							
Central California—							
San Francisco -----	16	9	7		9	3.45	1.94
Alameda -----							
Berkeley -----	3	2	1		2	5.20	3.47
Oakland -----	9	6	3		6	4.53	3.02
Richmond -----							
San Rafael -----							
Monterey -----							
Salinas -----							
San Luis Obispo -----							
Palo Alto -----							
San Jose -----	2	2			2	5.14	
Santa Cruz -----							
Watsonville -----							
Fresno -----	5	4	1	2	6	14.3	17.2
Sacramento -----	5	1	4		1	7.5	1.5
Stockton -----	6	6			6	17.0	
Vallejo -----							
Modesto -----	2		2			37.7	
Southern California—							
Los Angeles -----	14	11	3	1	12	2.8	2.4
Long Beach -----	3	2	1		2	10.9	7.3
Pasadena -----	2		2			4.3	
Pomona -----	3	3			3	22.8	
Santa Monica -----							
Redlands -----	1	1			1	7.1	
Riverside -----	2	2			2	10.1	
San Bernardino -----	3	3		1	4	17.7	23.6
San Diego -----	6	5	1	1	6	11.3	11.3
Santa Barbara -----	5	5			5	33.7	
Siskiyou County -----				1			
San Mateo County -----				1			
Santa Cruz County -----				1			
Humboldt County -----				1			
Orange County -----				1			
San Joaquin County -----				1			
Mariposa County -----				1			
Fresno County -----				1			
Stanislaus County -----				2			
Sacramento River -----				2			
Shipboard -----				2			
At large -----				1			
Other states and countries -----				5			
Totals -----	91	66	25	25			

Minnesota last June had been visiting the family in which the typhoid cases appeared, for a month previous to their onset. The Los Angeles health officer also stated that this visitor had returned to Minnesota and that she was suspected of being a carrier. This matter was at once referred to the Minnesota State Board of Health. That board reported that the suspected carrier had had typhoid fever while residing in a town in northern Minnesota. It is supposed that she contracted the

disease from her three-year-old son, who was sick in May, 1916. At this time there were several cases of typhoid fever in the Minnesota town, all of which were undoubtedly due to the use of a polluted private water supply. Upon further investigation at Los Angeles it was found that the suspected carrier had not left the state as supposed, and examinations were made to determine if she were still a typhoid carrier. The bacteriologist at the Los Angeles county hospital examined stool specimens which proved negative for typhoid, indicating that the case had cleared up after the carrier had infected the members of the household where she had been visiting.

The health officer at San Diego recently reported a case of smallpox in the person of a recent arrival from Minneapolis. The patient stated that he had slept with his brother, who developed smallpox after the patient had arrived in San Diego. Upon referring the matter to the Minnesota State Board of Health these facts were confirmed. This is but another instance of the value of reciprocal notification with other states.

Similarly, other typhoid fever cases originating in Minnesota have been found in Oakland and Berkeley. In all cases notification has been made to the Minnesota State Board of Health. One of these patients, after recovery, returned to Minnesota, where he was placed under the observation of the local health officer, in order to determine if he might still be a source of infection.

Minnesota has referred to the California State Board of Health a number of histories of the exposure to cases of communicable disease, of persons journeying to California, and through the receipt of this information the California State Board of Health has been able to check potential outbreaks in California. That this cooperation is valuable to both states is self-evident. Some other states show an interest in such reciprocal notification, but they are very few in number.

If all health officers and all boards of health, city, county and state, were to reciprocate regularly in the notification of cases of communicable disease, the control of such diseases would be made much more efficient. The plan is so exceedingly simple, but at the same time productive of such excellent results, that its universal adoption would seem most important. It is a simple follow-up system applied through a central office, but it stimulates morbidity reporting, helps in discovering foci of infection and paves the way for thorough investigations, and finally for the adoption of adequate measures for control.

EMPLOYMENT FOR THE TUBERCULOUS.

Providing tuberculous patients with employment suitable to their physical condition is a problem that is being successfully solved in many of the California institutions for the tuberculous. At La Viña Sanatorium in Los Angeles County, shown in the accompanying illustration, some of the patients who are able to, engage in arts and crafts



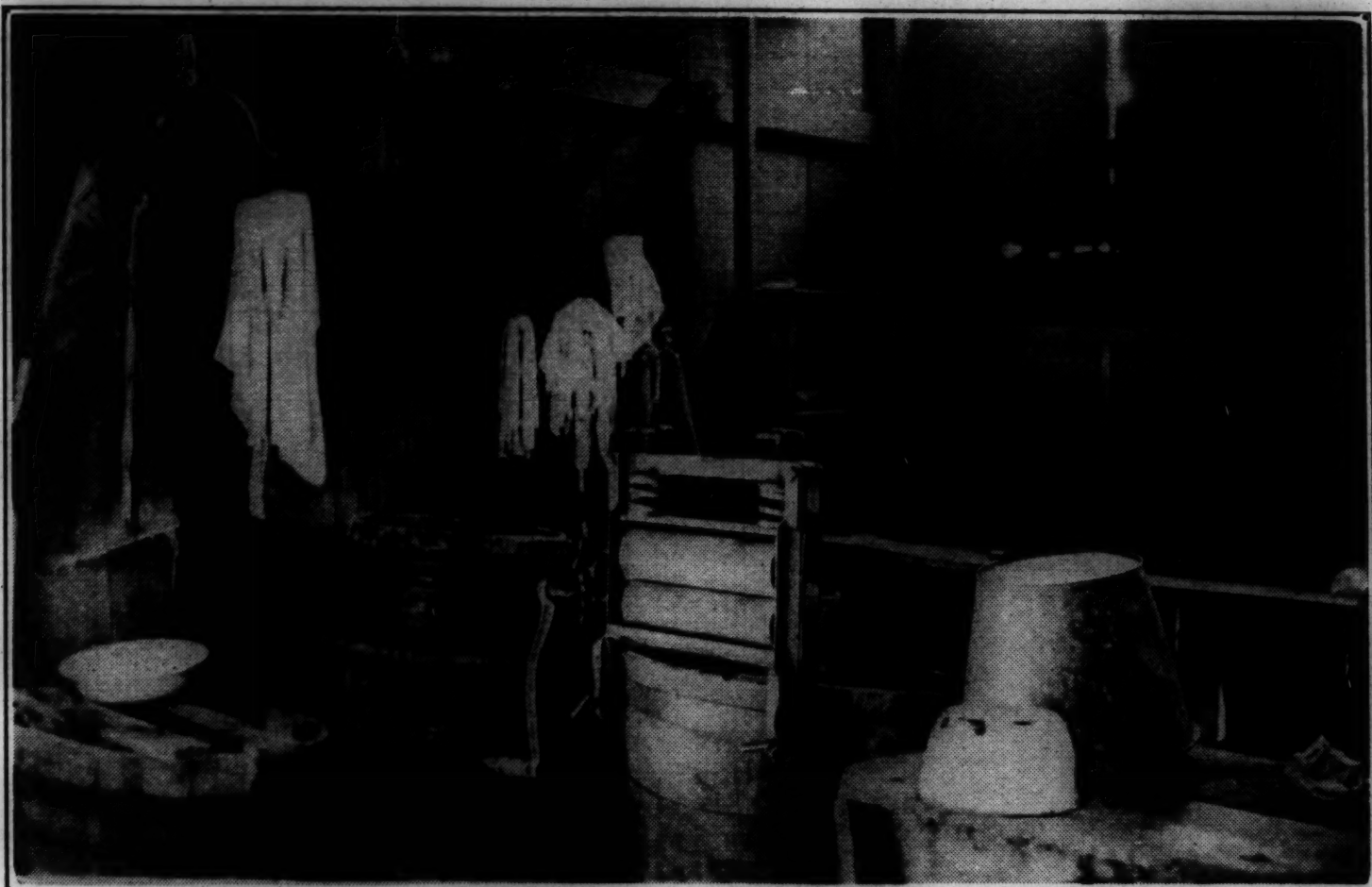
Tuberculosis patients in La Viña Sanatorium, who are engaged in brass, copper and leather work, under medical supervision. Out-of-door work and other forms of graduated exercise are also provided.

work, especially in the metals. The potteries at Arequipa Sanitarium for wage-earning women in Marin County are too well known for further comment. Other institutions for the care of the tuberculous in California provide outdoor work such as gardening, light carpentry and graduated exercise of various sorts.

To successfully provide tuberculous patients with employment requires great skill in supervision. If overdone, the results may be exceedingly disastrous to the patient.

SANITATION OF LAUNDRIES.

Californians patronize public laundries to a greater extent, probably, than do the residents of most states; various printed reports tend to establish this fact. It may be that labor conditions have something to do with this, for in California there are comparatively few of the so-called "hand laundries" conducted by whites, and laundresses who work in the home are not nearly so numerous in California as in many other states. Most of the public laundries in California are the regulation steam laundries, wet wash, French laundries, Japanese and Chinese laundries. The method employed by the wet wash laundries is similar to those employed in steam laundries, except that in the wet wash laundries, the finished product is delivered washed but undried.



The wash room in a dilapidated laundry. Clothes may be washed clean in a room like this, but they can not be kept clean in such surroundings.

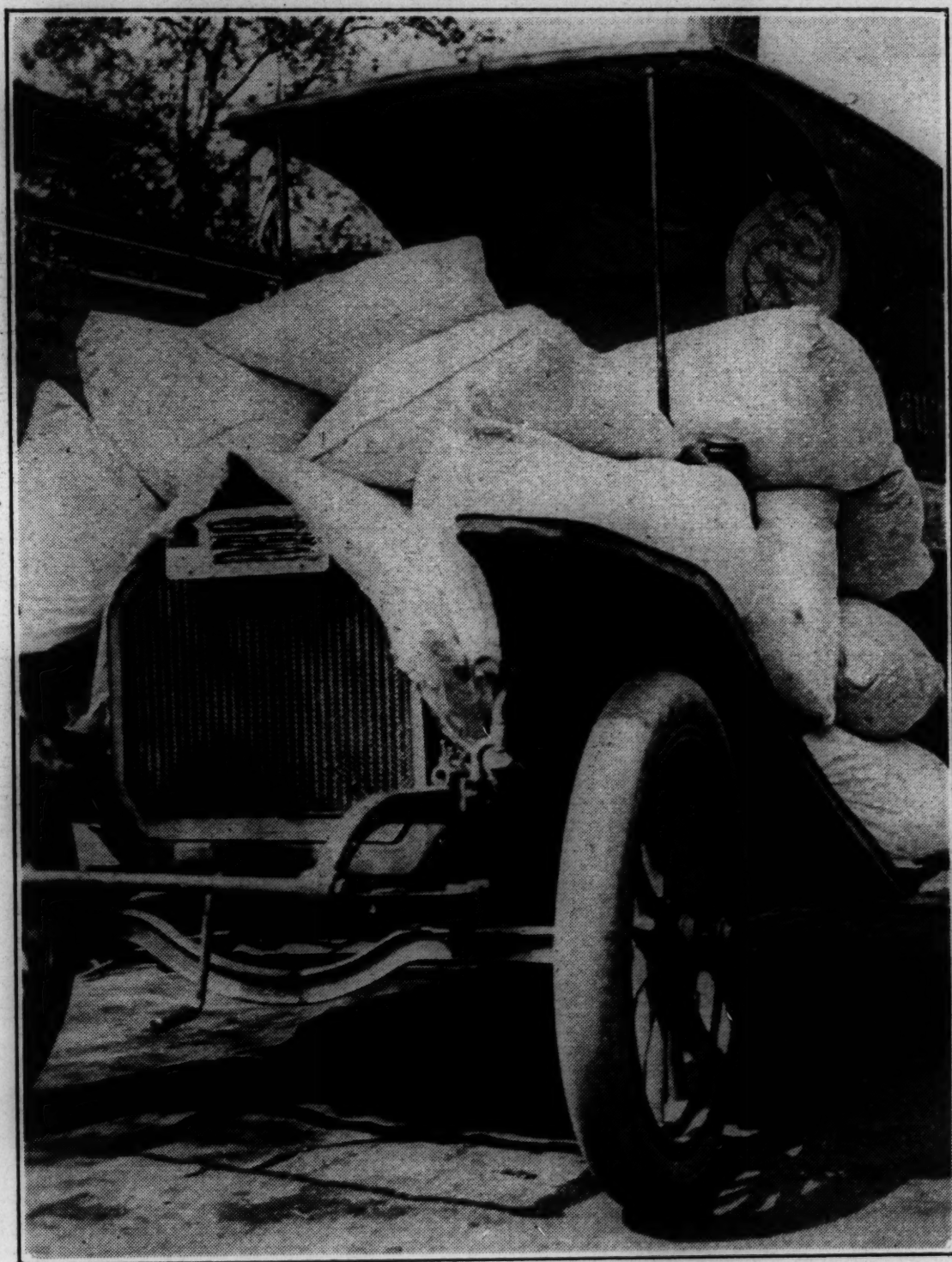
Most of the French laundries are conducted in the same manner as steam laundries, being fully equipped with modern machinery. Some of the Japanese laundries are similarly equipped and may be classed as steam laundries also. In California, "hand laundries" conducted by other than Chinese and Japanese, are seldom heard of.

An investigation into the methods employed in these public laundries in California reveals a few serious faults. The chief of these lies in permitting clean and soiled clothing to come into contact in various ways, during different stages of the laundering process. This fault is found in both steam laundries and in "hand laundries." Local health authorities should take steps to remedy this defect wherever it may be found.

Steam Laundries.

The soiled clothing that finds its way into public laundries comes from every class of society. To stand by a marker who receives the bundles of soiled clothing, reminds one of "unsung heroes." Sorting

over and marking soiled clothing of every description from all sorts of homes, lodging houses, factories, hotels and every sort of place where human beings live and work, is not pleasant. A description of the soiled clothing that passes through this worker's hands would be most unæsthetic, but it is sufficient to say that one is astounded, after watching a laundry marker at his work, to learn that as a rule the general health conditions of these workers are satisfactory. In fact, an investigation made by the Massachusetts State Board of Health into the possibility of "markers" contracting infectious diseases proved negative. Dr. George M. Kober in "Diseases of Occupation and Voca-



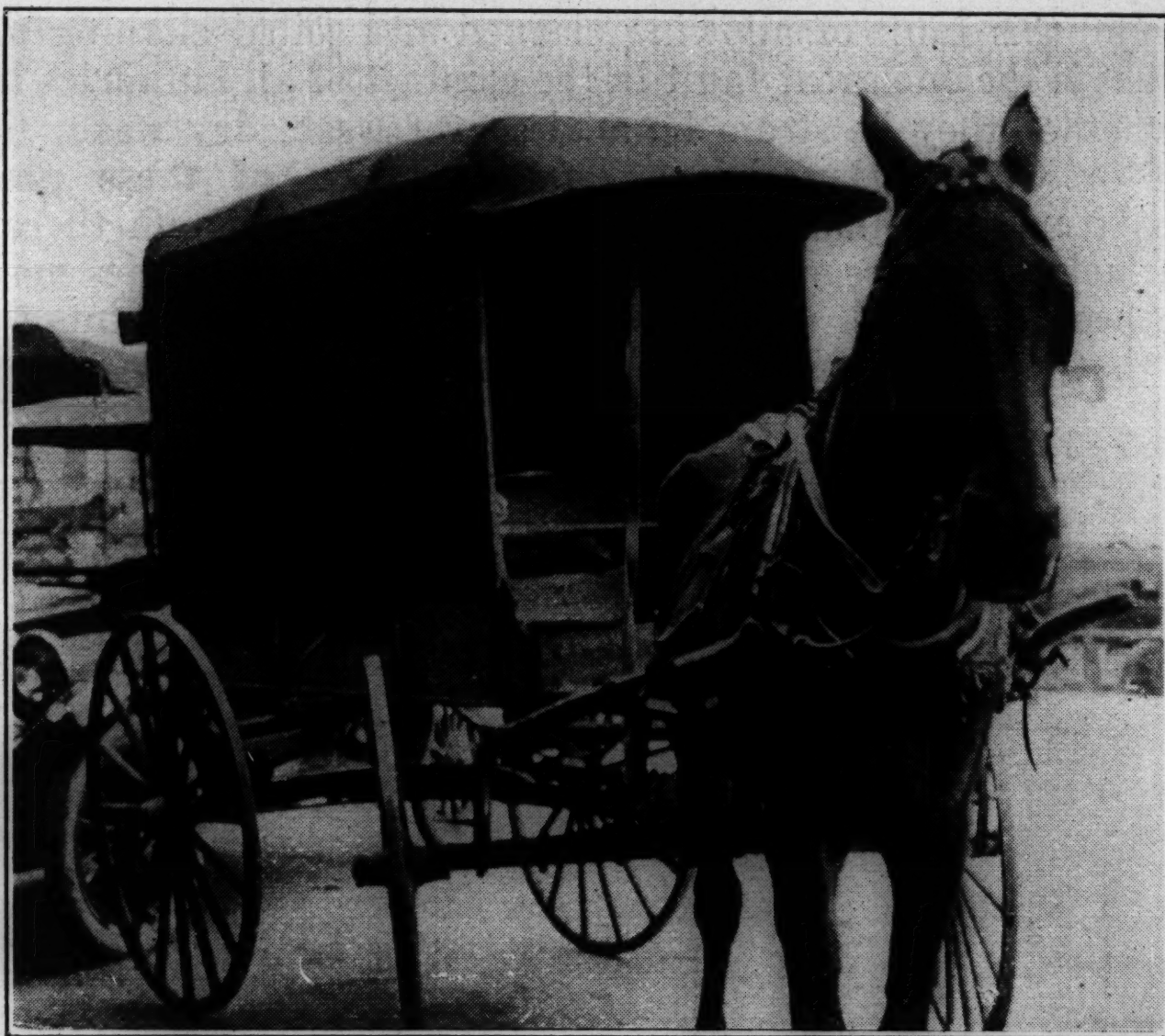
A load of dirty clothes on the way to the laundry. Some laundries deliver clean clothes promiscuously in these dirty sacks, which are washed only when absolutely necessary.

tional Hygiene," states that it is rather remarkable that recent textbooks make no reference to the possibility of contracting infectious diseases in the laundry business. Perhaps laundry markers, as a class, are strongly resistant to infectious diseases or they may live a charmed existence, but there are no data to prove that they suffer from communicable disease to a greater extent than any other similar group of workers.

It is certain that no one desires to have his clean clothing come into contact with another person's soiled clothing, regardless of what the incidence of disease among laundry markers may be, but in many of

the steam laundries dirty clothing is brought into the laundry in a muslin sack, which is the property of the laundry concern. These sacks are not washed until they look very dirty and are used over and over again for the delivery of clean clothing to customers. Thus, clean clothing may be returned in a dirty bag which has just brought soiled and infected clothing into the laundry, from what sort of a place no one knows. This practice, wherever found, should be discontinued at once. It may have considerable to do with the spread of communicable disease.

Clean clothing for delivery and collections of soiled clothing are thrown together in the same wagon by most laundries. In this way clean clothing and soiled clothing may come into contact. This is



Another conveyance for the collection of dirty clothes and the delivery of clean clothes. No separate compartments are provided, the clean and the soiled clothes being piled in the wagon together.

particularly true for those laundries that do not supply wrapping paper for their bundles of finished product. These laundries should at least be required to place wrapping paper over freshly laundered clothes and it would be much better if separate compartments for clean and soiled clothing were provided in the wagons.

Chinese Laundries.

The sight of a Chinaman, slapping the reins on the back of a scarecrow horse, hitched to a dilapidated wobbly-wheeled wagon, is familiar in all California cities, on Sunday afternoons particularly, when the Oriental is gathering up clothes for the Monday morning wash. The practice of piling dirty and clean clothing together is followed by the Chinese, few of whom use wrapping paper for the finished product.

Dirty clothing in the Chinese laundries also is often sorted on the same table with the clean clothing. Another great fault with the Chinese laundries lies in the fact that employees are sometimes allowed to sleep in the same room with the clean clothing. Chinese laundry workers often sleep underneath tables with clean clothing piled high all about them.

While most of these laundries are housed in dilapidated, old, dwelling houses or store buildings which are woefully lacking in general sanitation, they are, generally speaking, kept in cleanly fashion. There is no elegance or convenience in the washing utensils provided, but the dirt is generally washed out of the clothing and the soaps used are generally strong enough, combined with heat, to accomplish ordinary disinfection.

As a rule, this fault of allowing cleaned and soiled clothing to come into contact is the one great fault in the conduct of all laundries in California, whether they be steam laundries, wet wash, dry wash, French, Japanese or Chinese laundries. The regulation of these places is important from the public health point of view, although there is an apparent lack of data regarding the exact part that laundries may play in public health. At all events, it is certain that no one wants to wear clothing that has touched the dirty clothing of another.

PROGRESS OF HEALTH LEGISLATION.

Some of the New Health Laws.

The following bills have been signed by Governor Stephens:

Ch. 51 (S. B. 99, Lyon) amends nurses registration act; provides a penalty for the impersonation of any applicant at any examination for certification as registered nurse. Section 11 of the act is amended so as to permit the investment of all funds in the nurses registration fund in excess of ten thousand dollars by the State Board of Control in the same manner that the funds of the state school land fund are invested.

Ch. 63 (A. B. 141, Byrne) provides for the inspection and licensing by the State Board of Health of public swimming pools, bathhouses, etc.

Ch. 65 (A. B. 232, Phillips) provides for the examination and certification of plumbers in each city and town which has a sewer system, the examination to be conducted by an examining board of three members appointed by the State Board of Health.

Ch. 102 (A. B. 238, Brown) provides for the repeal of section 3062 of the Political Code pertaining to the appointment of a health officer by the county board of supervisors in each unincorporated city or town of five hundred or more inhabitants.

Ch. 44 (A. B. 510, Kylberg) repeals section 373, Political Code, which prohibits pesthouses or hospitals for the care of cases of communicable diseases within the limits of any incorporated city.

Ch. 46 (A. B. 742, Ambrose) amends section 3074 of the Political Code, placing the bureau of vital statistics under the supervision of the state registrar of vital statistics, such registrar to promulgate and enforce all rules and regulations for the enforcement of the act as may be adopted by the State Board of Health.

Ch. 110 (A. B. 762, Lyon) amends cold storage act; provides for the deposit of license fees from cold storage warehouses to the credit of the food and drug laboratory instead of to the State Board of Health traveling and contingent fund.

Ch. 48 (A. B. 826, Edwards) prohibits taking shellfish from contaminated sources if they are determined by the State Board of Health to be a menace to health; provides for the examination of areas from which shellfish may be taken to determine if such places are subject to sewage contamination.

Ready to Become Law.

The following bills have passed both houses and now await the Governor's action:

S. B. 91 (Jones) provides not only for the prevention of the common use of drinking receptacles, but it also prevents the use of casks, water coolers and other receptacles for storing or supplying drinking water unless covered and protected so as to prevent persons from dipping the water therefrom and contaminating it.

S. B. 92 (Jones) prohibits keeping towels in public places for common use and provides for boiling or steaming all towels intended for use by more than one person, in public places, between consecutive uses of such towel.

S. B. 163 (Inman) provides for the amendment of section 4233 of the Political Code, permits the board of supervisors in each county receiving a subsidy from the state for its tuberculosis hospital, to receive and care for pay patients from adjoining counties; permits boards of supervisors to unite with other such county boards in the establishment and maintenance of joint hospitals or wards for the treatment of tuberculosis.

S. B. 404 (Inman) provides for the repeal of "An act to provide for the reporting of occupational diseases," approved April 21, 1911. (The reporting of occupational diseases is now under the jurisdiction of the State Industrial Accident Commission.)

S. B. 405 (Inman). This bill empowers the State Board of Health to inspect and investigate all institutions where patients having syphilis and gonococcus infections are treated. It also provides for the rating of such institutions on equipment, provision for diagnosis and medical attention, capacity for ambulatory and bed patients and for efficiency in the treatment of such patients.

S. B. 558 (Benson) amends an act of 1913 preventing the supply of water dangerous to health for domestic purposes; extends the provisions of the act to apply to impure and impotable waters as well as waters dangerous to health; provides a penalty for violations.

S. B. 559 (Benson) amends portions of the public health act pertaining to the disposal of sewage; extends the scope of the act to apply to sewage treatment works and sewage disposal other than into streams and natural bodies of water; provides a penalty for violations.

S. B. 608 (Rigdon) amends the contagious disease act. Provisions similar to S. B. 428; also makes it the duty of governing bodies to repay moneys expended by the state for the extermination of ground squirrels on public lands.

A. B. 239 (T. V. Brown) amends certain sections of the Political Code; places the responsibility for the enforcement of various laws, regulations, and quarantine rules pertaining to health upon the health officer of an incorporated city rather than upon the local board of health; protects records of tuberculosis cases against private inspection.

A. B. 240 (T. V. Brown) amends "The Public Health Act"; permits the quarantine of carriers of various communicable diseases; makes slight changes in the lists of reportable and quarantinable diseases.

S. B. 640 (Burnett) amends hotel and lodging house act, making it the duty of the State Superintendent of Weights and Measures to enforce the act.

A. B. 741 (Ambrose) amends the registration act; makes the director of the bureau the state registrar. It also provides for the creation of primary rural registration districts consistent with the model registration act. The bill requires reports of births to be made within five days instead of 36 hours; makes a number of minor changes.

A. B. 743 (Ambrose) provides for the employment of a clerk of the State Board of Health and for additional clerical and professional assistance.

A. B. 763 (Lyon) amends pure food act; makes it possible for the State Board of Health to fix standards of purity for foods and liquors; raises certain salaries in the pure food and drug laboratory; empowers the director of the laboratory or his agents to quarantine adulterated or mislabeled foods.

A. B. 765 (Lyon) defines commercial feeding stuffs and requires labeling with the address of manufacturer, the minimum amounts of protein and fat and maximum of fiber. The State Board of Health is empowered to enforce the provisions of the act.

A. B. 1123 (Satterwhite). The "new milk law" (Chapter 164, Statutes of 1915) reintroduced with a corrected title and minor amendments. One amendment clearly forbids the sale of milk as "guaranteed," "Grade A" or "Grade B," anywhere in the state unless under the supervision of an approved local inspection department. The State Veterinarian is required to exclude reacting animals from herds, and to mark cows which react.

A. B. 1124 (Satterwhite) prohibits any person, etc., to exchange or offer for sale, any butter or other milk product, except cheese, in the composition of which any milk enters other than such as is permitted in the "new state milk law."

A. B. 1343 (Rose) provides for regulation of the sale, production and manufacture of dairy products.

A. B. 1424 (Eksward) enables the smaller cities to combine with each other and surrounding and intervening territory to form local health districts for the purpose of maintaining complete health departments under full-time expert health officers.

THE RELATION OF FARM WEEDS TO HAY FEVER.*

By HARVEY MONROE HALL.

That plants have for a long time been considered as in some manner connected with the cause of hay fever is indicated by the name of this malady. It was not until recent years, however, that the exact relation of plant pollen to the disease was scientifically established. Today it is well known that pollen produced by the flowers of certain plants is directly responsible for most cases of hay fever. Since something over one million sufferers in the United States are personally interested in the suppression of the plants which cause their trouble, and since at least a portion of these plants are also objectionable as agricultural weeds, it may be worth while for those interested in weed legislation to keep in touch with the work of physicians and others aiming at the prevention of hay fever.

There has been much misconception in the public mind as to the kinds of plants that cause the disease. Many sufferers, and even physicians, have supposed that it was caused by plants with conspicuous and showy flowers. This, however, is seldom the case. The reason is obvious. The pollen produced by large or showy blossoms is almost always insect carried, is therefore relatively heavy and not produced in great abundance. On the other hand, most plants with small, inconspicuous flowers, are wind pollinated, their pollen is therefore light and produced in great abundance, and it is this voluminous, light-weight pollen that reaches the nostrils of susceptible people and causes the trouble. The patient, noticing the showy flowers of a neighbor's orchard trees or ornamental shrubbery, is likely to hold these responsible for his hay fever, whereas the cause is much more likely to be the homely, neglected weeds of the roadside or of his own back yard, the blooming period of these overlooked weeds being the same as that of the flowers to which he has assigned the blame.

It is thus seen that in any attempt to determine which plants are the cause of hay fever in a particular district, the wind pollinated ones should be examined first. But not all such are causative factors and, on the other hand, it is possible that a few insect pollinated species may sometimes produce the disease, at least when large quantities of the flowers are brought near to a susceptible person. Often the botanical relationship of a plant will furnish a clue as to whether or not a suspected species is injurious. Thus, when it was found by experiment that ragweed was actually a source of hay fever, other members of the ragweed tribe of composites, such as poverty weed, cocklebur, Franseria, etc., were examined, and all thus far tested have given positive results.

The final criterion in all cases is what is known as the "biological test." This consists of applying a small amount of the pollen to the nostril of a person susceptible to hay fever, or to the angle of the eye. If the well known hay fever symptoms develop, the plant from which the pollen was taken is then classed as a hay fever species. Skin reactions are also induced with solutions of the pollens, and in this

*Reprinted from the Monthly Bulletin of the California State Commission of Horticulture for February, 1917.

manner the exact species which has caused hay fever in a patient may sometimes be determined by the clever physician. Even a resistance to the disease is sometimes built up by injecting from time to time small amounts of a vaccine prepared from the same kind of pollen as that to which the patient is susceptible. This treatment by immuni-



FIG. 8. Greater Ragweed. *Ambrosia trifida*, a southern species which is a chief cause of hay fever. Another species of this plant, *Ambrosia psilostachya*, is found in California. (After Clark and Fletcher.)

zation is still in the experimental stage and much investigation of hay fever plants and of methods of treatment will be necessary before it can be universally employed.

The study of the causes of hay fever in this country has been carried on largely by the American Hay-Fever-Prevention Association. The work has consisted of a determination of the weeds that cause the disease, the education of the public to the injurious effects of these plants, and an attempt at their suppression through cooperation and legislation. It has been shown that in some districts, notably in New Orleans, the number of hay fever cases has been greatly reduced through the weed-cutting campaigns fostered by this organization and supported in some cases by local ordinances.

In California the study has only begun. Through cooperation with the botanical department of the State University and with local botanists and physicians the association just mentioned has been assembling data and making tests of all plant species under suspicion, so far as pollen could be obtained. Dr. Grant Selfridge, a San Francisco specialist, has inaugurated a botanical survey of certain districts in order to determine the occurrence and abundance of hay fever plants, as well as to procure pollen for testing and for use in treatments for immunization. He considers this well worth while even for use in his own practice. It is highly desirable, however, that the work should be carried on under state or national auspices in order that every district may be thoroughly examined and the results made immediately available.

The results thus far obtained indicate that certain of our weeds are serious offenders. It has not yet been possible to examine certain others which are under grave suspicion. It may be said, in general, that most grasses may cause the spring type of hay fever. Johnson grass, ray grass, and a mixture of timothy and red-top all give positive reactions on test. The disturbance caused by grass pollen is usually not so serious as that brought on by pollen of some other plants, more especially certain ones belonging to the composite family.

Of plants other than grasses, the species thus far investigated include the following:*

Western Mugwort (*Artemisia heterophylla*). This weed, so common on ditch and river banks in many parts of the state, is perhaps our worst hay fever plant. Every effort should be made to eradicate it, or at least to hold it in check by mowing, or otherwise, wherever it grows in abundance.

Western Ragweed (*Ambrosia psilostachya*). In the eastern states the ragweed is the most common cause of the disease. Our western species has a larger pollen but its reaction is just as great.

Cocklebur (*Xanthium pennsylvanicum*) gives a positive reaction and is probably important because of its abundance. However, the relatively large size of its pollen grains prevents it from being a more common cause of hay fever.

False Ragweed (*Franseria acanthicarpa*) and its close relative, *Franseria tenuifolia*, both give a positive reaction.

Curly Dock (*Rumex crispus*) gives a positive but mild reaction. All of the species of dock will probably be found to cause mild cases of hay fever in some districts.

Lamb's-quarters, White Goosefoot, or Pigweed (*Chenopodium album*) and Wormseed (*Chenopodium anthelminticum*) both give mild reactions. They are probably of little importance.

Salt-bush (*Atriplex*). One species (*Atriplex bracteosa*) gave a very definite reaction in the case of one patient. Since salt-bushes are so abundant in California and produce pollen copiously during the dry season, they will be further investigated with much interest.

*For the results of biologic tests here mentioned the author is indebted in some cases to Dr. W. Scheppegegrell, President of the American Hay-Fever-Prevention Association, in others to Dr. Grant Selfridge, of San Francisco.

California plants which are under suspicion because of their botanical relationships and which will doubtless be found to cause hay fever include the following:

- Sand-bur (*Franseria dumosa*).
- Poverty Weed, or Western Elder (*Iva axillaris*).
- Bud-brush (*Artemisia spinescens*).
- Russian Thistle (*Salsola kali*).
- Hymenoclea (*Hymenoclea salsola*).
- Guatemote, or Mule Fat (*Baccharis viminea*).
- Spiny clotbur (*Xanthium spinosum*).
- Sneezeweed (*Helenium puberulum*).
- Iodine Bush, or Kern Greasewood (*Spirostachys occidentalis*).
- Hop Sage (*Grayia spinosa*).



FIG. 9. Spiny clotbur, *Xanthium spinosum*, a very prolific weed in certain sections of California. Known also as Spanish needles. (Newman Mo. Bul., Cal. Com. Hort.)

In addition to these few species there are perhaps a hundred others which need investigation. Among them are many of the showy insect pollinated sorts which may be more important than we think or which may cause hay fever by direct inhalation or under special circumstances. The results will be reported in the medical journals and elsewhere, but in the meantime those especially interested in the subject should consult the reports of Dr. W. Scheppegrell, president of the American Hay-Fever-Prevention Association. The most available of these is Reprint No. 349 from the Public Health Reports of the United States Public Health Service. This deals with the subject in a general way, but I understand that the author is soon to issue a report dealing more specifically with hay fever plants of the Pacific states.

Special bulletins pertaining to flies, mosquitoes and other public health problems that are of special importance at this season of the year may be obtained without cost from the California State Board of Health. These publications are:

Malaria and Mosquito Control, Special Bulletin No. 9.

Flies, Their Habits and Control, Special Bulletin No. 20.

The Production of Pure Milk, Special Bulletin No. 13.

Rural Sanitation, Special Bulletin No. 14.

Sanitation in the Mountains, Special Bulletin No. 10.

THE APRIL MEETING OF THE STATE BOARD OF HEALTH.

The regular monthly meeting of the State Board of Health was held in Sacramento, April 7, 1917. There were present: President George E. Ebright, Vice President F. F. Gundrum, Secretary Wilbur A. Sawyer, Dr. Robert A. Peers, Dr. Edward F. Glaser, and Dr. Adelaide Brown.

President Ebright, chairman of the Committee on Public Health and Hygiene of the State Defense Council, presented a report, outlining the work that must necessarily be undertaken by the various bureaus of the State Board of Health under the new State Defense Act. Doctor Ebright placed special emphasis upon the importance of the control of water supplies and sewage disposal facilities, the work of sanitary inspections, the eradication of malaria, the examination of foods, and the preparation for increased work in epidemiology. Doctor Ebright's report also touched upon the necessity of preparation for expert work in bacteriology.

The proposed five years and three months course of training at the Lane Hospital, San Francisco, was accepted as meeting in full the requirements of the Nurses Registration Act for an accredited training school.

The action of the secretary in appointing Professor W. B. Herms and Mr. Stanley Freeborn of the University of California to continue mosquito abatement work during the present year, without salary, was confirmed.

In accordance with the recommendation of the director of the Bureau of Tuberculosis, the Santa Clara County Hospital was placed upon the list of hospitals eligible for the state subsidy.

In accordance with the recommendation of the director of the Bureau of Sanitary Engineering, permits for supplying water to consumers were issued to the city of Lodi, the Hayward Water Company and the Marysville Water Company.

The secretary was authorized to appoint employees of municipalities and public service corporations as inspectors of the State Board of Health for the purpose of patrolling watersheds under the direction of the Bureau of Sanitary Engineering.

Many other minor matters were considered and acted upon.

More than one hundred food and drug cases next came before the board and were passed upon.

W. A. SAWYER, *Secretary*.

MARCH REPORT OF PLAGUE SUPPRESSIVE MEASURES.

By C. L. WILLIAMS, Passed Assistant Surgeon, United States Public Health Service,
in Charge Joint Federal and State Plague Suppressive Measures.

During the month of March, 1917, ground squirrel eradication measures consisted mainly of the application of carbon bisulphide. Several large tracts of land were treated and work was started on a few particularly badly-infested bits of land.

By far the most important development of the month was the discovery on March 16, 1917, of a plague-infected squirrel near San Mateo in San Mateo County. This infected squirrel was shot at a location a little over eight miles north of the location where in the spring of 1916 was shot the only other plague-infected ground squirrel discovered in the county of San Mateo. The discovery of this case is complete confirmation of the possibility brought forward in our report for December, 1916, on plague suppressive measures, in which it was set forth that the infection might easily travel north throughout the length of the peninsula and finally reenter the city of San Francisco.

This situation has been set forth before the Bureau of the Public Health Service, before the board of health of the city of San Francisco, before the board of supervisors of San Mateo County, and is here presented before the State Board of Health. The city of San Francisco has been urged to eradicate squirrels within the confines of San Francisco County, and it is urged upon all other parties concerned that sufficient funds be made available for intensive squirrel eradication in San Mateo County.

Below is appended a tabulated statement of eradication measures during the month:

Number of inspections and reinspections of lands-----	1,554
Number of acres inspected and reinspected-----	576,670
Number of acres treated with poisoned grain-----	158,531
Number of acres treated with waste ball method-----	42,816
Number of holes treated -----	304,240
Number of acres treated with destructors-----	125
Number of acres treated with hose and funnel-----	15,265

REPORT OF THE BUREAU OF ADMINISTRATION FOR MARCH, 1917.

W. A. SAWYER, M.D., Director.

Public Health Activities.

During March, Dr. Adelaide Brown, member of the board, spoke before the Kentfield Women's Club on "Vivisection," on "Public Health" before the senior class of the Medical Department of Stanford University, on "Prenatal Care" before the Baby Welfare Week audience in San Francisco, on "The Midwife and Cheap Maternities" before the Social Service section of the San Francisco Polyclinic.

MORBIDITY REPORTS.

GUY P. JONES, Morbidity Statistician.

In order to keep in the closest possible touch with health conditions throughout the state, it has become necessary for a weekly summary of communicable disease in California to be issued to all health officers and to many of the hospitals and similar institutions in the state. Beginning the first week of April, these weekly reports were sent to every health officer in the state.

Morbidity reports to be of value must be turned over quickly, and these weekly summaries will be useful only if reports from health officers are forwarded immediately after the close of each week. Particular information relative to cases of communicable disease that may have originated in the territory outside of the health officer's jurisdiction is particularly desired. This is one of the most important features of morbidity registration in California, and the State Board of Health is able to follow up these cases and to check any potential or actual outbreaks only in so far as this information is supplied.

Smallpox.

Smallpox remained about stationary during the month of March, there having been 62 cases reported, as against 64 cases reported during February. Thirty-one of these cases occurred in San Francisco, 13 in Redlands, seven in Pomona and the remainder were scattered throughout the state. Of the 62 cases reported, 49 had never been vaccinated, ten had been vaccinated more than seven years preceding attack, one had been vaccinated within seven years preceding attack, and vaccination histories were not available for the remaining two.

Typhoid Fever.

Typhoid fever showed a slight increase during March, 61 cases having been reported as against 57 cases reported for February. Eleven cases were reported from San Francisco, ten cases from Los Angeles City, and the remainder were widely scattered throughout the state.

Epidemic Cerebrospinal Meningitis.

Six cases of epidemic cerebrospinal meningitis were reported during the month of March. Five cases were reported from Los Angeles City and one case from Sacramento City.

Poliomyelitis.

Four cases of poliomyelitis were reported during March. One case was reported from Fresno County, one from Willows, one from Santa Clara County and one from Red Bluff.

Malaria.

Malaria showed a slight increase during March, 22 cases having been reported as against 17 cases reported during February.

Scarlet Fever.

There was a considerable decrease in the number of scarlet fever cases reported during March, as only 535 cases were reported. Six hundred and twenty-two cases were reported during the month of February.

Measles.

Measles showed a marked increase during March, there having been 3,868 cases reported, as against 3,305 during the month of February.

Diphtheria.

Diphtheria showed a marked decrease during March. One hundred and ninety-five cases were reported, as against 788 for the month of February.

Venereal Diseases.

During the month of March there were 118 cases of gonorrhea and 113 cases of syphilis reported. One hundred and ten cases of gonorrhea and 123 cases of syphilis were reported during the month of February.

Leprosy.

Three cases of leprosy were reported during March.

Tuberculosis.

Five hundred and ninety-two cases of tuberculosis were reported during March.

The following table shows the number of cases of communicable disease reported during the month:

Smallpox -----	62	Mumps -----	1,028
Typhoid -----	61	Pneumonia -----	181
Epidemic cerebrospinal meningitis..	6	Tuberculosis -----	592
Poliomyelitis -----	4	Whooping-cough -----	168
Malaria -----	22	German measles -----	54
Scarlet fever -----	535	Hookworm -----	3
Measles -----	3,868	Leprosy -----	3
Diphtheria -----	195	Pellagra -----	2
Gonorrhea -----	118	Tetanus -----	2
Syphilis -----	113	Trachoma -----	24
Chickenpox -----	942	Ophthalmia neonatorum -----	2
Erysipelas -----	69	Trichinosis -----	19

SANITARY INSPECTIONS.

EDWARD T. ROSS, State Sanitary Inspector.

During the month a quarantine was placed on Siskiyou County by the State Board of Health, because of the presence of rabies. An investigation was made to ascertain the extent of the territory involved, and it was learned during the investigation that eight positive cases as well as a large number of suspected cases of rabies have occurred within the past year (one cow, one calf, and six coyotes). Four positive cases in coyotes were found during January of the present year. The majority of these were found in the eastern portion of the county. One positive and a number of suspected cases, however, were reported from the extreme western portion. In company with Dr. J. Roy Jones, county health officer, the towns of Yreka, Montague, Weed, Dorris and Hornbrook were visited. In addition to the investigation, measures were instituted for the control of the disease. Health officers, constables, marshals and citizens in each locality were interviewed. All promised to cooperate with the county health officer in the enforcement of the quarantine. In the majority of the towns visited we found that the authorities had already taken steps for the control of dogs, and in several places loose dogs had been killed and disposed of.

At a meeting of the board of supervisors in Yreka, the rabies situation was thoroughly discussed. An ordinance requiring a license to be paid on all dogs in the county was passed; the county health officer was authorized to employ a deputy to assist in the enforcement of the quarantine regulations and to purchase poison for free distribution to responsible citizens, such poison to be used in the extermination work. At my suggestion, the board appealed to the U. S. Biological Survey for five trappers to assist in the extermination of coyotes. In answer to their appeal, Mr. E. R. Sans of the above-mentioned service placed one foreman and five trappers in the field. The U. S. Forest Service is lending valuable assistance, and is cooperating with the county health officer in every way possible. Later in the month a second visit was made to Siskiyou County. It was learned during this visit that the quarantine is being rigidly enforced by the county health officer and other officials. A large number of loose dogs and cats have been destroyed and strenuous efforts are being made for the extermination of coyotes.

An investigation was also made into the rabies situation in Shasta County. It was learned that but three cases of rabies had occurred in the past year (one dog and two coyotes). One coyote was found in Fall River Mills, one in Anderson and the dog was found in Redding. While in Redding, I attended a meeting of the board of supervisors and advised that precautionary measures against rabies be taken. Acting upon this advice the board passed an ordinance requiring a license to be paid on all dogs in the county outside of incorporated towns.

In addition to the various investigations made during the month, a number of sanitary reports covering sewage disposal, canneries, bakeries, meat markets, restaurants, etc., were submitted.

Summary.

Investigations (rabies) -----	3	Fruit and vegetable markets -----	20
Towns visited -----	9	Bakeries and restaurants -----	51
Towns reinspected -----	1	Groceries -----	11
Sanitary reports submitted:		Ice cream parlors -----	18
Sewage disposal systems -----	1	Jails -----	1
Canneries -----	4	Laundries -----	4
Meat markets -----	42	Miscellaneous reports -----	9

MONTHLY REPORT OF THE BUREAU OF COMMUNICABLE DISEASES, FOR MARCH, 1917.

By J. G. CUMMING, M.D., Director.

Investigation of Twelve Cases of Trichinosis at San Rafael.

Through the cooperation of Dr. J. H. Kuser of San Rafael, this bureau had the opportunity of investigating twelve cases of obscure illness simulating typhoid fever. Blood specimens had been sent to this laboratory for the Widal; all these were negative. When a negative report on these findings eliminated typhoid, as a possible factor, this bureau cooperated with Dr. Kuser in the investigation. It was found that all the cases occurred in a Portuguese family who lived on a ranch a couple of miles distant from San Rafael. The family was composed of Mr. and Mrs. A., and eleven children; all were ill, with the exception of the nine months old infant. The family was in extremely poor circumstances and all had been brought to the hospital in San Rafael, March 11.

On going over the hospital records of the cases it was noted that the temperature charts were not typical of typhoid. The temperature, however, was high, ranging from 101° to 105° in all cases. Mrs. A. was questioned and it was learned from her that there had been neither headache nor backache, and diarrhoea in only the two elder children, but that there was weakness, stiffness and pain in the limb muscles. She found it difficult to extend her legs and when attempting to do so there was considerable pain. The muscles of the legs were moderately rigid. There was pain on active and passive motion and this was marked on pressure over the leg muscles, especially the extensors of the foot and the flexors of the thigh. The arms were but moderately stiff. The involvement—stiffness and soreness—of the muscle groups was far more extensive than in typhoid cases.

The examination of J., age fourteen (temperature 103, pulse 87, respiration 38), showed a moderate rigidity of almost the entire body. The face was flushed, eyes bright, eyelids oedematous and slightly ecchymotic. There was sordes of both mouth and nose. The hands appeared somewhat swollen. The arms were in a semifolded position and the legs drawn up. The pulse was increased but full. Speech was accompanied by pain and somewhat interfered with, the voice being rough and gurgling. The tongue could be partially protruded and the mouth opened only with difficulty. The neck muscles were noticeably involved. When the left arm was drawn out by moderate force there was pain in the biceps. The involvement of the right bicep was less marked. The forearm flexors—of the hand—showed involvement, by the pain elicited on pressure, and this was more marked in the left than in the right. The grip of the right hand was almost normal and accompanied by only slight pain in the fingers; while that in the left was weak and accompanied by considerable pain. The intercostal muscles and diaphragm appeared somewhat involved as indicated by moderate increase in respiratory rate. There was no demonstrable involvement of the back or abdominal muscles. The patient could draw the legs up with comparative ease; while extension was difficult and more painful. Passive

motion of the legs was painful, though less so than active motion. All the limb muscles were involved, as shown by the pain elicited on pressure of the various muscle groups. Involvement, however, of the extensor groups, appeared to be less than the flexor groups. The extensiveness of the involvement of the muscle groups was indicated by the degree of rigidity, and of flexure and by pain on pressure. The contraction of the muscles was wholly involuntary, tonic in nature and possibly due to a tetanus-like toxin. The knee reflexes were difficult to obtain and on response were exaggerated. The patient walked with great difficulty and owing to the marked rigidity of the flexors of the legs and the extensors of the feet, the knees were continuously extended forward and the heels were raised from the floor, the body being poised on the toes. The diagnosis reached by a study of this clinical picture was that of trichinosis.

History of Eating Partially Cooked and Raw Pork.

Mrs. A. was questioned as to the kind of food the family had eaten during the last few weeks. As they were in poor circumstances their diet was limited for the most part to dried fish, potatoes, bread and milk. Furthermore, it was found that a hog had been killed about a month ago. The spareribs of this had been boiled and eaten. A part of the pork had been made into sausage and, following their custom, this had been hung by the stove for a period of eight days, for the purpose, as Mrs. A. said, of blending the condiments used in seasoning.

Mrs. A. stated that she had fried the sausage with potatoes and that these were the chief articles of diet prior to the present illness. She always cooked the three meals for the family but, owing to her frequent absences at the neighbors, the children were occasionally left unsupervised. During these times the children frequently ate the sausage and the only cooking resorted to was a mere warming on the stove lids. Furthermore, the two older boys admitted that they had eaten some of this raw.

At the ranch some of the pork was obtained. The gross specimens were suspicious of trichina and on microscopical examination many muscle forms were found.

Further Clinical Histories.

Joseph, age 16 (temperature 102.5, pulse 92, respiration 42). Face pinched, rigid and sallow. The eyes were bright and the mental condition unclouded. Sordes were marked. He was apprehensive, complained of pain and general discomfort and asked why something was not done for him. His mental attitude might lead one to suspect mild hysteria. Of all those ill, this patient had the most marked symptoms of muscle involvement. The jaws could be opened to the extent of one-half inch and the tongue extended only to the outer margins of the lips. Both of these acts required a great effort on the part of the patient and were accompanied by pain. His voice was high pitched and speech was painful.

Apparently the entire voluntary musculature, including the neck and back muscles, was involved. The muscles were stiff, rigid and board-like. The muscle groups were markedly contracted. The more

powerful of these caused the thighs to be flexed on the body and the legs on the thighs and the feet extended. The arms were flexed and lay across the thorax. The back and neck muscles were moderately rigid. The head was thrown back and the back slightly bowed. The patient preferred to lie on the side because of the pain in the neck and back muscles when lying flat. His condition was that of mild opisthotonus. There was pain on pressure in practically all muscle groups.

Mary, age 13. The face was somewhat sallow; eyes dull, but mental condition normal. There was pain in the throat when the tongue was extended, and speech was normal but accompanied by some pain. The jaw muscles were contracted. The left arm and forearm were more involved than the right. The grip of the left hand was practically nil, while that of the right was below normal. She complained of pain under both knees when the legs were extended. After considerable mental concentration movements of the legs were executed with an abnormal degree of effort.

Isabella, age 10 years (temperature 105, pulse 102, respiration 24). There was pallor of the skin, the cheeks were flushed; the eyes bright; sordes moderate and severe epistaxis. The patient had been delirious during the night, due doubtless to the high temperature. She has been sick from ten to twelve days and the muscles were as yet but slightly involved. The biceps were moderately contracted and a gripping by the hand or a drawing out of the arm produced some pain. The legs were somewhat more involved than the arms. They were drawn up and the musculature was moderately firm and painful on pressure.

Louis, age 9 years (temperature 103, pulse 94, respiration 49). Eyes are œdematous and moderately ecchymodic. The arms were not markedly involved, there being only mild resistance when they were forcibly drawn out. There was some pain on pressure over the right biceps. The legs were drawn up and pressure over the foot extensors and leg flexors caused pain. It required considerable effort after mental concentration for the patient to extend the legs.

In the remaining five children the severity of the symptoms lessened with the successive decreases in their respective ages. In the younger two, there was mild fever, irritability, increased eosinophilia and no demonstrable muscle pain. The mild symptoms in the young children may be explained on the basis of the smaller amounts of sausage eaten—the degree of infection depending directly upon this factor. The illness in the case of Mr. A. was a moderate infection of about the same degree as Mrs. A. It is interesting to note that eosinophilia were most marked (42%) in those patients who were in the early stages of muscle involvement; while only 12 per cent was found in that patient with the most extensive muscle invasion. In those with the muscle rigidity of a week or more the percentage ranged from 12 to 24. The average red cell blood count for the twelve patients is as follows:

Large mononuclear	-----	5
Small mononuclear	-----	11
Neutrophiles	-----	41
Eosinophiles	-----	26
Basophiles	-----	1/10

Conclusions.

First—There were twelve cases of trichinosis in a family of thirteen members, the nursing baby being the only one not affected.

Second—The infection was due to eating partially-cooked pork and in two cases to eating uncooked sausage.

Third—The degree of illness was most severe in the older children who had unrestricted access to the dried sausage.

Fourth—The symptoms of muscle involvement were typical in those severely affected.

Fifth—Eosinophilia was most pronounced in those in the early stage of muscle involvement.

Sixth—In the gross the pork was suspicious of trichinosis and on microscopical investigation trichina were found.

Division of Biological Examinations.

Summary of Examinations made in the California State Hygienic Laboratory during the month of March, 1917.

Condition suspected	Positive	Negative	Inconclusive	Total
Main Laboratory at Berkeley—				
Anthrax -----	2	1	-----	3
Diphtheria (diagnosis) -----	10	53	8	71
Diphtheria (release) -----	11	26	2	39
Diphtheria (school investigations)* -----	65	88	4	157
Gonococcus infection -----	21	30	-----	51
Hookworm -----	44	689	-----	733
Malaria -----	-----	3	-----	3
Rabies -----	8	5	-----	13
Syphilis (Wassermann test) -----	13	223	10	246
Tuberculosis (sputum examinations) -----	11	23	-----	34
Typhoid (Widal test) -----	1	31	5	37
Typhoid (excreta) -----	1	31	-----	32
Miscellaneous -----	1	5	-----	6
				1,425
Northern Branch at Sacramento—				
Diphtheria (diagnosis) -----	5	21	-----	26
Diphtheria (release) -----	1	6	-----	7
Malaria -----	-----	6	-----	6
Tuberculosis (sputum examinations) -----	4	27	-----	31
Typhoid (Widal test) -----	3	8	1	12
				82
San Joaquin Valley Branch at Fresno—				
Diphtheria (diagnosis) -----	1	13	-----	14
Diphtheria (release) -----	-----	6	-----	6
Gonococcus infection -----	1	-----	-----	1
Malaria -----	1	1	-----	2
Tuberculosis -----	3	7	-----	10
Typhoid (Widal test) -----	-----	7	-----	7
				40
Southern Branch at Los Angeles—				
Diphtheria (diagnosis) -----	1	48	5	54
Diphtheria (release) -----	18	16	1	35
Malaria -----	-----	1	-----	1
Tuberculosis (sputum examinations) -----	7	20	-----	27
Typhoid (Widal test) -----	1	8	2	11
				128
Total number of examinations -----	-----	-----	-----	1,675

*Cultures taken from school children at Monterey (92). Cultures taken from school children at Stockton (65).

Division of Epidemiological Investigations.

Epidemiological Investigations and other Special Investigations during March, 1917.

Main Laboratory at Berkeley—

- An investigation of trichinosis at San Rafael.
- An investigation of diphtheria at Crockett.
- An investigation of typhoid fever at Bakersfield.
- An investigation of scarlet fever at San Leandro.
- An investigation of malaria at Los Molinos and Vina.
- An investigation of a case of anthrax at Napa.
- An investigation of typhoid fever at Floriston.
- Continuation of hookworm investigation.

Total number of investigations..... 8

Division of Preventive Therapeutics.

Pasteur Treatment for the Prevention of Rabies by the State Hygienic Laboratory during the month of March, 1917.

	Treatment commenced	Treatment completed
Main Laboratory at Berkeley.....	1	2
Northern Branch at Sacramento.....	0	0
San Joaquin Valley Branch at Fresno.....	0	0
Southern Branch at Los Angeles.....	0	0
Laboratory of Sacramento Board of Health, by deputized bacteriologist	0	0
Laboratory of San Francisco Board of Health, by deputized bacteriologist	0	0
Laboratory of Los Angeles Board of Health, by deputized bacteriologist	0	0
Laboratory of San Diego City Board of Health, by depu- tized bacteriologist	0	0
Laboratory of Letterman General Hospital, Presidio, by deputized bacteriologist	0	0
Laboratory of United States Naval Hospital, Mare Island, by deputized bacteriologist.....	0	0
Totals	1	2

Distribution of Laboratory Products.

Vaccine for the Prevention of Typhoid Fever Issued by the State Hygienic Laboratory during the month of March, 1917.

Number of physicians to whom vaccine was sent..... 9
 Number of complete treatments sent..... 136

Ophthalmia Neonatorum Prophylactic Outfits Distributed During the Month of March, 1917.

Number of outfits, containing two ampoules each, issued..... 728

Public Health Instruction.

Participation in Instruction in Public Health during March, 1917.

Main Laboratory at Berkeley—

Bacteriological instruction outfits sent out..... 2
 Bacteriological instruction outfits in use..... 31
 Lectures by the Director..... 4

REPORT OF THE BUREAU OF VITAL STATISTICS.

GEORGE D. LESLIE, Director.

Mortality by Months.

The 39,860 deaths in California occurred by months, as follows: January, 4,171; February, 3,176; March, 3,343; April, 3,167; May, 3,299; June, 3,076; July, 3,134; August, 2,948; September, 2,864; October, 3,014; November, 3,476; and December, 4,192.

The annual total of 39,860 for 1916 represents an average of 109 deaths on each of the 366 days. The daily average number of deaths each month ranged as follows through the year: January, 135; February, 110; March, 108; April and May, each, 106; June, 103; July, 101; August and September, each, 95; October, 97; November, 116; and December, 135. The daily average death toll fell steadily, month after month, from January to August (or September), and then rose successively in September to December.

The average daily mortality stood at the maximum point for January and December, each 135, and at the minimum point for August and September, each 95. It may be added that general daily averages for the preceding five-year period, 1911 to 1915, inclusive, show the month of highest daily mortality to be January, with December almost as high, and the month of lowest daily mortality to be August, with September nearly as low. For the five-year period, as for 1916 alone, the daily mortality decreased in January to August and then increased in September to December.

Births, Deaths and Marriages for February.*

State Totals and Annual Rates. The following table shows for California as a whole, the birth, death and marriage totals for the current and preceding months in comparison with those for the corresponding months of last year, as well as the annual rates per 1,000 population represented by the totals for the current and preceding months. The rates are based on an estimated midyear population of 3,037,968 for California in 1917, the estimate having been made by the Census Bureau method with slight modifications.

Birth, Death and Marriage Totals, with Annual Rates per 1,000 Population, for Current and Preceding Months, for California: February.

Month	Monthly total		Annual rate per 1,000 population, 1917
	1917	1916	
February—			
Births -----	3,899	3,951	16.7
Deaths -----	3,689	3,179	15.8
Marriages -----	2,271	2,028	9.7
January—			
Births -----	*3,659	4,158	14.2
Deaths -----	†4,160	3,942	16.1
Marriages -----	2,371	2,225	9.2

*Exclusive of 423 delayed returns for births occurring in 1916.

†Exclusive of 85 delayed returns for deaths occurring in 1916.

*NOTE.—The present report is for the month preceding but two. This order must be followed, because of the publication of the Bulletin during the early part of the month, before the tabulation of records for the next preceding month is completed.

The death total for February, 1917, shows a marked increase over February, 1916, and a considerable increase in this year's marriage total is shown over that of last year, but the birth total is only about the same this year as last year. The birth registration for February exceeded the death total by 210, or 5.7 per cent.

Length of Residence. The length of residence in California for the 3,689 decedents in February was as follows: Under 1 year, 173, or 4.7 per cent; 1 to 9 years, 676, or 18.3 per cent; 10 years and over, 1,713, or 46.5 per cent; life, 923, or 25.0 per cent; and unknown, 204, or 5.5 per cent.

County Marriage Totals. The counties showing the highest marriage totals for the month were as follows: Los Angeles, 502; San Francisco, 479; Alameda, 205; Orange, 99; Sacramento, 99; San Diego, 84; Fresno, 68; Santa Clara, 59; San Joaquin, 58; San Bernardino, 52; Marin, 47; and Imperial, 34. The aggregate for San Francisco and other bay counties was 769, against 601 for Los Angeles and Orange counties together.

County Birth and Death Totals. Exclusive of stillbirths in both cases, the birth and death totals for the month were as follows for the leading counties, arranged in decreasing order of birth registration:

County	Births	Deaths	County	Births	Deaths
Los Angeles -----	963	911	San Bernardino ----	95	102
San Francisco -----	588	657	Tulare -----	89	38
Alameda -----	362	389	Kern -----	76	45
Fresno -----	176	128	Contra Costa -----	66	45
Santa Clara -----	138	137	Riverside -----	61	51
Sacramento -----	136	118	Stanislaus -----	55	37
San Diego -----	123	118	Santa Barbara ----	54	25
San Joaquin -----	109	138	Orange -----	52	57

City Birth and Death Totals. Birth and death totals, exclusive of stillbirths, are presented similarly for the principal California cities below:

City	Births	Deaths	City	Births	Deaths
Los Angeles -----	651	582	Berkeley -----	52	32
San Francisco -----	588	657	Long Beach -----	51	41
Oakland -----	237	207	Bakersfield -----	37	33
Sacramento -----	97	102	Alameda -----	33	25
San Diego -----	91	84	Santa Barbara ----	31	20
Fresno -----	63	55	San Bernardino ----	29	34
San Jose -----	53	33	Riverside -----	28	28
Stockton -----	53	92	Richmond -----	24	6

Geographic Divisions (Infant Mortality). The following table presents data for geographic divisions to show in comparison with total births and deaths the number of deaths under one year as some indica-

tion of conditions with reference to infant mortality in different portions of the state:

Total Births and Deaths, with Deaths Under One Year, for Geographic Divisions: February.

Geographic division	Total live births	Total deaths, all ages	Deaths under 1 year
The State -----	3,899	3,689	343
Northern California—			
Coast counties -----	120	175	12
Interior counties -----	201	176	17
Central California—			
San Francisco -----	588	657	45
Alameda County -----	362	389	26
Other bay counties -----	115	85	9
Coast counties -----	283	221	18
Interior counties -----	793	661	84
Southern California—			
Los Angeles City -----	651	582	50
Rest of Los Angeles County -----	312	329	22
Other counties -----	474	414	60

Cause of Death. The following table shows the classification of deaths in California for the current month, in comparison with the preceding month:

Deaths from Certain Principal Causes, with Proportion per 1,000 Total Deaths for Current and Preceding Month, for California: February.

Cause of death	Deaths, February	Proportion per 1,000	
		February	January
All causes -----	3,689	1,000.0	-----
Typhoid fever -----	11	2.9	6.0
Malarial fever -----			
Smallpox -----	4	1.1	0.2
Measles -----	24	6.5	1.2
Scarlet fever -----	3	0.8	1.5
Whooping-cough -----	13	3.5	1.7
Diphtheria and croup -----	22	6.0	4.1
Influenza -----	61	16.5	22.4
Other epidemic diseases -----	8	2.2	2.7
Tuberculosis of lungs -----	461	125.0	110.6
Tuberculosis of other organs -----	44	11.9	15.6
Cancer -----	237	64.2	53.8
Other general diseases -----	143	38.8	36.3
Meningitis -----	18	4.9	6.7
Other diseases of nervous system -----	244	66.1	67.3
Diseases of circulatory system -----	753	204.1	199.7
Pneumonia and broncho-pneumonia -----	475	128.7	148.8
Other diseases of respiratory system -----	81	22.0	29.1
Diarrhea and enteritis, under 2 years -----	39	10.6	9.1
Diarrhea and enteritis, 2 years and over -----	19	5.2	4.3
Other diseases of digestive system -----	163	44.2	43.3
Bright's disease and nephritis -----	270	73.2	81.0
Childbirth -----	34	9.2	9.1
Diseases of early infancy -----	109	29.6	32.7
Suicide -----	80	21.7	19.0
Other violence -----	238	64.5	58.7
All other causes -----	135	36.6	35.1

In February there were 753 deaths, or 20.4 per cent of all, from diseases of the circulatory system; 556, or 15.1 per cent, from diseases of the respiratory system (pneumonia, etc.); and 505, or 13.7 per cent from various forms of tuberculosis; thus heart disease and pneumonia were again ahead of tuberculosis, as in the two preceding months.

Other notable causes of death for the month were as follows: Violence, 318; Bright's disease and nephritis, 270; diseases of the nervous system, 262; cancer, 237; diseases of the digestive system, 221; and epidemic diseases, 146.

The deaths from epidemic diseases were as follows: Influenza, 61; measles, 24; diphtheria and croup, 22; whooping-cough, 13; typhoid fever, 11; smallpox, 4; and all other epidemic diseases, 11.

The deaths from the three leading epidemic diseases reported for the month were distributed by counties, as follows:

Influenza		Measles		Diphtheria	
Alameda	5	Alameda	5	Alameda	2
Amador	1	Imperial	2	Fresno	2
Butte	2	Los Angeles	2	Los Angeles	4
Calaveras	1	Madera	1	Marin	1
Contra Costa	1	Riverside	1	San Francisco	11
Fresno	5	San Francisco	11	San Joaquin	1
Kern	3	Santa Barbara	1	Stanislaus	1
Kings	1	Sutter	1		
Los Angeles	12			Total	22
Mendocino	2	Total	24		
Merced	3				
Orange	2				
Plumas	1				
Riverside	1				
San Bernardino	2				
San Diego	1				
San Francisco	1				
San Joaquin	3				
Santa Clara	1				
Shasta	1				
Sierra	1				
Sonoma	1				
Stanislaus	5				
Tehama	1				
Trinity	1				
Tulare	1				
Tuolumne	2				
Total	61				

Sex, Race and Nativity. The proportion of the sexes among the 3,689 decedents in February was: Male, 2,258, or 61.2 per cent; and female, 1,431, or 3.88 per cent.

The race distribution of decedents was: White, 3,507, or 95.1 per cent; Japanese, 68; Chinese, 64; Negro, 46; and Indian, 4.

The 3,507 white decedents were classified by nativity as follows: California, 872, or 24.9 per cent; other states, 1,403, or 40.0 per cent; foreign countries, 1,153, or 32.9 per cent; and unknown, 79, or 2.2 per cent.

Age Periods. The 3,689 deaths reported for the month were distributed by age periods as follows: Under 1 year, 343, or 9.3 per cent; 1 to 4 years, 150, or 4.1 per cent; 5 to 9 years, 57, or 1.5 per cent; 10 to 19 years, 94, or 2.6 per cent; 20 to 29 years, 248, or 6.7 per cent; 30 to 39 years, 383, or 10.4 per cent; 40 to 49 years, 414, or 11.2 per cent; 50 to

59 years, 499, or 13.5 per cent; 60 to 69 years, 508, or 13.8 per cent; and 70 years and over, 993, or 26.9 per cent.

Infant Mortality. The 343 deaths under 1 year were distributed by age in months as follows: Under 1 month, 151, or 44.0 per cent; 1 to 2 months, 61, or 17.8 per cent; 3 to 5 months, 54, or 15.7 per cent; and 6 to 11 months, 77, or 22.5 per cent.

The 343 deaths under 1 year of age, in comparison with the 3,899 live births reported for the month, represent an infant mortality ratio of 88 per 1,000 births.

The California law requires that cases of the following diseases be reported immediately to the LOCAL Health Officer:

Anthrax
Beri-beri
Cerebrospinal Meningitis
Chickenpox (Epidemic)
CHOLERA, ASIATIC
Dengue
DIPHTHERIA
Dysentery
Erysipelas
German Measles
Glanders
Gonococcus infection†
Hookworm
LEPROSY
Malaria
Measles

Mumps
Pellagra
PLAGUE
Pneumonia
POLIOMYELITIS*
Rabies
SCARLET FEVER
SMALLPOX
Syphilis†
Tetanus
Trachoma
Tuberculosis
Typhoid Fever
TYPHUS FEVER
Whooping-cough
YELLOW FEVER

Names of diseases in capitals are quarantinable.

†Reportable by office number; name not required.

*Poliomyelitis is quarantinable by regulation of the State Board of Health.

REPORT BY TELEGRAPH any cases of **PLAGUE, ASIATIC CHOLERA, YELLOW FEVER** or **TYPHUS FEVER**.

By Section 2979a, Political Code, it is made the duty of "every attending or consulting physician, nurse, or other person, having charge of or caring for any person afflicted with any of said contagious diseases, to report at once in writing to the local board of health, or local health officer" etc.

Section 16 of the Public Health Act requires that "physicians," etc., shall "promptly report" such communicable diseases to the local health officers.

Penalties: The penalty provided under the Public Health Act last referred to, for a violation of any of its provisions, is that the person so violating "shall be guilty of a misdemeanor and upon conviction shall be punished by a fine of not less than twenty-five dollars and not more than five hundred dollars, or by imprisonment for a term of not more than ninety days, or by both such fine and imprisonment."

Penal Code, Section 378, provides that "every person charged with the performance of any duty under the laws of this state relating to the preservation of public health, who wilfully refuses or neglects to perform same, is guilty of a misdemeanor."

Penal Code, Section 19, provides that the punishment for a misdemeanor is imprisonment in the county jail not to exceed six months, or a fine not exceeding five hundred dollars, or both.

REPORT OF THE BUREAU OF SANITARY ENGINEERING
FOR MARCH, 1917.

By C. G. GILLESPIE, C.E., Director.

SWIMMING POOL LAW.

The swimming pool bill has been signed by the governor. This measure requires all public natatoriums and bathing places to be conducted in accordance with rules and regulations which the State Board of Health shall adopt. When the law becomes effective it will be enforced without delay directly by the Bureau of Sanitary Engineering. It is intended that restrictions shall entail a minimum financial outlay and inconvenience in swimming pool operation, consistent with clean and healthful public bathing. Accordingly, owners and officials having to do with public bathing and swimming places should register with the bureau without delay in order that the first consideration be given to existing facilities.

Conferences.

A conference was had with the city officials of Stockton regarding sewerage into the San Joaquin River. The officials were practically pledged in favor of the so-called Castner septic tank. The bureau opposed the installation on the grounds of its inefficiency and excessive cost. Comparative estimates of cost on the Castner septic tank installation versus an Imhoff tank installation was as follows:

	Castner tanks	Imhoff tanks
Construction cost -----	\$228,000	\$154,000
Attendance -----	6,480	8,640
Chlorine -----	18,800	9,120
Fixed charges -----	11,400	7,700
Total annual charge, exclusive of power cost for pumping	\$36,680	\$25,460

It appeared from the evidence offered that the city would be compelled to put the sewage into the river during the coming summer in order to relieve the insanitary conditions in the various newly sewered districts. Accordingly, the board has given the city a permit to dispose of the sewage into the river after screening through a one-half inch screen and chlorination; plans to be approved by the State Board of Health.

The director was summoned by the State Railroad Commission as its own witness on the efficiency of modern filtration and the necessity of watershed ownership by the East Bay Water Company, supplying Oakland, Alameda, Berkeley and Richmond, to insure a safe working load on the filters. These filters are indispensable to make these surface waters clear. Incidentally, they are capable of taking care of a tremendous load of contamination. With watershed patrol and the helpful effect of storage, filters for these supplies are thoroughly competent

in themselves to insure safety. Watershed ownership therefore is to be considered as an additional insurance which is not warranted by the price which the consumer will pay.

Watershed Regulation and Patrol.

The State Board of Health can delegate all essential police powers to acceptable representatives of the public utility for watershed patrol. The work will be under the direction and instruction of this bureau. Rules and regulations may be formulated and enforced with the aid of the bureau.

SEWAGE DISPOSAL.

Applications for Permits Filed.

Paso Robles. To be allowed to dispose of an Imhoff tank effluent onto sand beds adjoining the Salinas River at the foot of Nineteenth street.

Permits Granted—None.

Plans Filed.

Santa Barbara. General plan of proposed sewage treatment works.

Ocean Beach, San Diego. Working drawings of sewer system and Imhoff tank.

Santa Barbara County. Tentative plans for sewage disposal of county poor farm.

Belle Air Addition, San Bruno. Plans for pumping station and septic tank.

Investigations, Inspections and Reports.

Vacaville. March 1. Numerous complains have been received against sewer farm offense from people living in the vicinity. The sewage is passed through a Castner septic tank from which it is allowed to run to waste on the city sewer farm comprising about thirty acres. The soil is dense and shallow, resulting in frequent escape into a dry ravine where it appears to create an intolerable stench. The bureau has recommended a more scientific use of the sewer farm in the hope that the necessity for more elaborate treatment works will not be necessary.

Yuba City, Sutter County Hospital. March 2. Inspection was made to advise on the best sewage disposal for the hospital. Clarification in a septic tank, followed by subsurface irrigation with tile, was recommended.

Chico. March 2. The Imhoff tank walls, the raising of which has been suggested to the city officials on numerous occasions, had not been modified. As a result, insufficient freeboard in the scum chambers results in the scum overtopping the walls and fouling the effluent. The trouble can be very easily eliminated by the aforesaid improvement.

San Pablo. Bates, Borland & Ayers, contractors on the San Pablo dam for the East Bay Water Company, have installed a septic tank and hypochlorite apparatus for treatment of the sewage of the camp prior to its discharge into San Pablo Creek below the dam.

Saratoga. March 1. Sewage is treated in a septic tank and then discharged into a small watercourse that is usually dry. Gross nuisance has been complained of and more complete treatment will be needed.

Los Gatos, Oaks Sanitarium. March 1. Sewage disposal in cesspools has proven unsatisfactory. A treatment plant will be necessary, the liquid to be finally disposed of by irrigation or discharged into a small watercourse.

Napa State Hospital. March 20. Sewage discharged into Napa River without treatment, except small portion from outlying buildings on farm. Recommended small septic tank and subsurface irrigation for disposal of sewage from isolation cottage and a similar installation at chicken ranch.

Bartlett Springs. March 26. Sewage is run into cesspool from which a portion overflows into Bartlett Creek. It is planned to build a wooden septic tank and conduct effluent into seepage culverts buried in gravel.

WATER SUPPLIES.

Applications for Permits Filed.

Hemet, Lake Hemet Water Company. To continue to furnish water to the city of Hemet and Hemet and Fairview tracts and adjoining territory, from San Jacinto River and tributaries and Lake Hemet.

Lodi. To continue to furnish water to the city of Lodi from four existing wells.

Watsonville, Watsonville Water and Light Company. To continue to supply water to Watsonville from Corralitos Creek, Brown Creek and auxiliary artesian wells.

Permits Granted.

Hayward, Hayward Water Company. To continue to supply to the city of Hayward water from wells now drilled on the company's property between Mount Eden and Alvarado.

Lodi. To continue to supply water to the inhabitants of the city of Lodi from four wells located within the city limits, on condition that:

1. The supply as delivered shall be maintained safe and sanitary.
2. No modifications or additions to works or in source of supply shall be undertaken without the approval of the State Board of Health.

Marysville, Marysville Water Company. To continue to furnish water for domestic purposes from its present supply to the city of Marysville, on condition that no future additions or alterations be made in the existing eight wells unless approved by the State Board of Health.

Plans Filed—None.

Investigations, Inspections and Reports.

Marysville, Marysville Water Company. The supply is derived from eight drilled wells within the city limits, one being installed in the year 1858; the remainder were installed between the years 1905 and 1917.

The supply is pumped into two storage tanks on the distributing system. Analyses indicate the water to be exceptionally safe and satisfactory for domestic use.

Yuba City. March 2. The water supply is obtained from one well 155 feet deep and one well 185 feet deep and is pumped to a 100,000-gallon tank on the distributing system. Works were installed in 1909. Analyses indicate the water to be safe and satisfactory for domestic purposes.

Watsonville. March 2. Water is obtained principally from two mountain streams nine miles north of town, but a pumping plant and six drilled wells in town are also maintained. The creek water is treated with alum and settled, then a portion of it is passed through a Jewell gravity sand filter with a nominal capacity only about half the consumption. When the creek water is excessively turbid it is diverted and well water is used. The watersheds are inhabited and contamination is imparted to the supply. Chlorination has been recommended and will be installed at an early date.

Pacific Grove, Monterey County Water Works. March 3. Company derives water from headwaters of Carmel River and conducts it in pipe line about twenty miles to Monterey, Pacific Grove, Del Monte and Carmel. Treats with chlorine. A large storage and service reservoir on the line permits the wasting of river water during storms so a clear water may be supplied at all times.

Salinas. March 4. Supply is derived from four tubular wells about 215 feet deep, near center of city. Analyses show satisfactory quality.

Hayward, Hayward Water Company. March 15. Supply derived from tubular wells about 500 feet deep, situated 4.5 miles southeast of town. Analyses show satisfactory quality.

Rio Vista. March 21. The water supply is derived from two 136-foot wells installed in 1914 and two other wells about 220 feet deep installed in 1917. Both pair of wells are about 50 feet from the Sacramento River. The water is pumped into storage tanks on the distributing system holding 200,000 gallons. Some trouble has been encountered due to silt when there is heavy draft on the wells. Bacteriologically, the supply is thoroughly safe.

Isleton, Golden State Asparagus Company. March 21. The water supplied to the workmen at the cannery is derived from Georgiana Slough, a badly polluted arm of the Sacramento River. The bureau is conducting laboratory experiments on the feasibility of rendering this water cleaner and safe by coagulation with filter alum and hydrated lime.

Galt. March 22. The water supply is furnished largely by several individuals but there are many wells supplying a single household. One of the supplies is furnished by Mrs. R. A. Haskins, obtained from two wells installed in 1879; analyses indicate that the water is thoroughly safe and satisfactory for domestic uses.

Miscellaneous Sanitary Inspections.

San Jose and vicinity. March 16 and 17. Various nuisances were examined into with Doctor Simpson, county health officer. The Di Fiori Cannery Company will be permitted to install sanitary, screened vault privies for the men working in the cannery. The Lachmann winery in College Park is responsible for a decided nuisance in the vicinity of the plant, due to the accumulation of fruit pulp and distillery waste on the premises. Effort is being made to permit the discharge of this material, after separating out the pits and heavier pulp, into the College Park sewer system. The Western Sugar Refineries Company, in the course of the manufacture of potash by incinerations of the waste products, now produce an offensive, gaseous product which has been the cause of some complaint. The company has tried washing the gases with some success. It appears, however, that secondary incineration at high temperature, as is practiced in garbage incineration, will remove the offensiveness much more surely.

Sanitary conditions at *Isleton, Elk Grove* and *Galt* were inspected March 21 and 22. The Oriental quarter in Isleton is to be commended for its cleanliness. The community of Elk Grove has no sewer system at the present time. The soil is fairly loose and sewage disposal underground is quite satisfactory. In the town of Galt there is neither comprehensive sewerage nor water supply. Each household has its own cesspool or privy and usually its own water supply, which is menaced by the insanitary sewage disposal. This community should by all means proceed diligently to obtain a sewer system and, if possible, a comprehensive water supply.

Laboratory Work.

Bacteriological examinations of water—249, of which 95, or 38 per cent, showed contamination.

Chemical examinations of water—254 (partial).

Sanitary chemical examination of water—1.

Chemical examination of sewage—1.

REPORT OF THE BUREAU OF TUBERCULOSIS FOR MARCH, 1917.

E. L. M. TATE, Director.

The charming Kathleen Burke, who is now in this country soliciting funds for the Scottish Women's Hospital, verifies the reports of the enormous increase of tuberculosis in Europe. She has aroused considerable enthusiasm wherever she has spoken, and one realizes what Europe is confronted with in caring, not for thousands, but hundreds of thousands of soldiers who have become victims of the white plague. We do not begrudge any of the money given for her work. Today, with the call to arms, we are confronted in California, as well as in other states, with a new problem. What happens to the man patriotic enough to enlist who can not pass the physical examination because tuberculosis is discovered? Has the government, or any state in the Union, offered to make immediate provisions for that man? So serious does this seem, that one of the plans that will be presented by the bureau to the Council of Defense will be the establishment of a convalescent camp for volunteers who can not be accepted on account of tuberculosis. This would not be a difficult thing to manage. There is sufficient land at the new Alameda County Tuberculosis Hospital to accommodate many temporary buildings.

The middle of the month a conference was held with the San Bernardino and Riverside County supervisors. We have found a site that will answer splendidly for the new joint county hospital. We now have a law definitely covering that point so that no county can raise the question of its unconstitutionality. Provision is made, so that a pay patient may enter the subsidized hospitals. This will make it possible for us to give treatment to many people whom we have not been able to reach before. Late in the month several meetings were held at Los Angeles with the members of the Japanese Association and the Los Angeles Tuberculosis Society to discuss the advisability of opening a special clinic for the Japanese. An interested and interesting group was brought together at the Y. W. C. A. dinner, and it was planned to make the clinic the nucleus for many other activities. The Japanese Association offered to help, as well as did the Japanese physicians. There already is a Japanese nurse, and it only needed a little help and planning to get it started.

Quite the most interesting piece of constructive work that has been accomplished in southern California has been done by the county health officer in a Mexican camp at El Monte. There has been considerable tuberculosis among the forty families there, and with the help of the bureau's field worker and a portable house, which can be taken into the camp, some welfare work will be started among these people to see if the spread of tuberculosis can not be stopped.

A great deal of time has been spent in the legislature working on the various bills. The persistent efforts to make medical inspection of school children impossible has come to naught; we shall be able to continue our work in the counties where so much good has been done already by the nurses.

A number of conferences have been held in San Francisco with the finance committee of the board of supervisors relative to the new sanitarium for early cases. Everything seems to indicate now that the amount asked for will be allowed in the budget. It looks now as if plans for tuberculosis control may become even popular with finance committees because the state aid is a valuable asset when it comes to asking for an increased appropriation. If the state had put the small amount appropriated into a state sanitarium, we would have had about 75 beds; as it is now, we shall have very nearly 1,500 before the year is over, as a result of the state aid.

Hospitals Inspected.

Sacramento.
Los Angeles.
San Francisco (3).

Alameda (1).
San Bernardino.
Fresno.

REPORT OF THE BUREAU OF FOODS AND DRUGS FOR MARCH, 1917.

E. J. LEA, M.S., Director.

Two hundred and thirty-five samples of foods, drugs and miscellaneous materials were received at the laboratory during the month of March.

Official Samples.

<i>Foods.</i>		
Bread -----	8	Honey ----- 1
Gluten ----- 5		Jellies and jams ----- 2
Potato ----- 2		Strawberry ----- 1
Swiss milk ----- 1		Apple ----- 1
Chocolate and cocoa -----	2	Liquors ----- 52
Coffee -----	3	Absinthe ----- 6
Coffee, chicory and cereals -----	1	Amer Picon ----- 8
Condiments -----	10	Blackberry cordial ----- 1
Catsup, apple ----- 1		Cognac ----- 4
Catsup, tomato ----- 3		Dubonnet wine ----- 2
Chili sauce ----- 1		Fernet Blanca ----- 1
Cocktail sauce ----- 2		Gin, Gordon ----- 2
India relish ----- 1		Gin, A. V. H. ----- 7
Mexican hot ----- 1		Jamacia rum ----- 2
Tomato puree ----- 1		Vermuth ----- 9
Confectionery -----	6	Whiskey ----- 10
Black strap ----- 1		Milk ----- 24
Caramels ----- 1		Clarified ----- 2
Licorice coloring ----- 1		Condensed ----- 1
Licorice sticks ----- 2		Fresh ----- 17
Suckers ----- 1		Malted ----- 1
Extracts -----	5	Pasteurized ----- 3
Jamacia ginger ----- 1		Oils ----- 5
Lemon ----- 1		Olive ----- 1
Peppermint ----- 2		Salad ----- 4
Vanilla ----- 1		Olives ----- 1
Fish -----	5	Pork and beans ----- 2
Herrings ----- 1		Ravioli ----- 1
Sardines ----- 3		Syrup, table ----- 1
Tuna ----- 1		Syrup, fountain ----- 1
Flaxseed meal -----	1	Vegetables ----- 4
Gelatine -----	1	Vinegar ----- 2
<i>Drugs.</i>		
Alcohol -----	2	Sweet oil ----- 1
Camphor compounds -----	2	Tincture iodine ----- 3
Cough cure -----	1	Water, Mercey ----- 1
Oil bergamot -----	1	Water, mineral ----- 1

Bread. Two samples labeled "potato bread" were found to contain no potato whatever. One sample sold as "Swiss Milk Bread" contained no milk. Several samples of bread sold as "gluten bread" were made largely from ordinary flour. Gluten bread should be made from flour containing 40.0 per cent of gluten, while ordinary flour contains from 8 per cent to 13 per cent of gluten.

Condiments. Several of the samples of catsup, sauces, etc., collected this month were decomposed and moldy. These samples were collected from restaurants and lunch counters where they had apparently spoiled, due to carelessness on the part of the employer or employees.

Confectionery. Two samples of confectionery sold as "licorice sticks" were analyzed. These so-called "licorice sticks" were composed of flour and low-grade molasses, artificially colored with lamp black and caromel, artificially flavored and contained less than one per cent of actual licorice. A mixture of this character can be legally sold, provided the ingredients are pure and wholesome and it is not sold or labeled in a way that will mislead the public.

Extracts. Lemon extract, vanilla extract, peppermint extract and Jamaica ginger samples were examined and found to consist of highly diluted extracts having very little value for flavoring purposes.

Fish. Large quantities of tuna, packed in olive oil, have been investigated and over 50 per cent of the cans examined consisted of decomposed, putrid material.

Jelly. One sample of "jelly strawberry flavor" contained no strawberry whatever. The product consisted of poor apple stock with an imitation strawberry flavor.

Liquors. Fifty-two samples of various liquors were examined this month, nearly all of which were found to be either partial or complete substitute products.

Some of these samples were blackberry cordials consisting of modified port wine. Cognac labeled as an imported high grade article consisted of distilled spirits with artificial flavor and artificial color. Several brands of gin labeled as genuine imported goods consisted of inferior spirits with imitation flavor; samples of vermouth with genuine French and Italian labels were found to consist of low-grade products; ten whiskey samples were analyzed—some of these purported to be genuine domestic goods and others imported goods. Some of these samples were complete substitute products, while others consisted in part of the genuine article. Others consisted of about one-fourth genuine stock and three-fourths inferior and cheap substitute, artificially colored and flavored to imitate the genuine goods as nearly as possible.

Milk. Twenty-two samples of fresh milk were examined. Four of these samples were labeled "Grade A Pasteurized," but it was found on investigation that the dairies from which this milk was received did not have authority to sell Grade A pasteurized milk. Furthermore, the samples contained excessive sand, dirt and manure. Six of the other samples contained excessive sediment, consisting of sand, dirt, manure, etc. This excessive sediment is in nearly all cases due to the lack of sanitation and to the carelessness of operators.

Oil, Salad. Four samples of salad oil, two of which were excessively rancid and contained decomposed material were examined this month.

Pork and Beans. One sample of canned pork and beans was examined and found to consist of Japanese Soya beans with a very small piece of fat pork. Soya beans differ from the regular types of American beans in that they contain much less starch.

Alcohol. Two samples of alcohol were analyzed, one was labeled "double strength alcohol, highest purity," etc. Analysis showed that this alcohol was below the standard for ordinary alcohol.

Unofficial Samples.

Foods.

Baking powder	1	Liquors	7
Beverages	2	Milk, condensed	1
Cheese	1	Nuts	4
Chocolate	1	Almonds	1
Eggs, incubator	1	Walnuts	3
Fish	3	Oil, lemon	1
Sardines, canned	2	Rice	1
Shrimps, canned	1	Sorghum	1
Flaxseed	1	Syrup	1
Flour	1	Vegetables	2
Ice cream powder	2	Corn, canned	1
Jiffy-jell	1	Peas, canned	1
Licorice	1	Miscellaneous articles	2

State Institution Samples.

Foods.

Baking soda	1	Flour	5
Beans	2	Fruit, evaporated and dried	3
Butter	1	Oysters	1
Cereals	6	Pastes	2
Cheese	2	Spices	7
Coffee	5	Syrup	2
Coffee substitute	1	Tea	1
Corn	1	Vinegar	1

Miscellaneous.

Leather	3	Tallow	2
Powder from boiler	1	Washing soda	1
Soap	2		

Flour. Five samples of flour were analyzed during this month and two found to be deficient in protein.

Coffee Substitute. One sample was examined and found to contain a considerable quantity of cereal badly damaged by mold.

Spices. Seven samples of spices were examined. Two cinnamon samples consisted of inferior and worthless material. Two mace samples consisted largely of false mace and Bombay mace.

Tallow. Two samples of tallow were rancid and did not conform to specifications.

Wholesale Liquor Adulteration.

In February the inspectors of this department unearthed a system of wholesale adulteration of liquors at the Julius Levin Company's cellars in San Francisco. On February 9 the inspectors collected thirteen official samples. As the violations of this company concerned the United States Internal Revenue Department, as well as the bureau of foods and drugs, we cooperated with the United States Internal Revenue Department which investigation led to the payment of \$25,000.00 in fines, in addition to several thousand dollars in revenue of which the Government had been defrauded.

Four of the samples collected by our inspectors were obtained at the Mart Saloon, San Francisco, Louis H. Brownstone, owner, but had been purchased from the Julius Levin Company.

The samples collected consisted of—

Three samples of Pisco brandy, two containing 25 per cent genuine Pisco brandy and 75 per cent adulteration, and one containing 50 per cent genuine and 50 per cent adulteration. The 50 per cent genuine stock was bought at a high-grade, fashionable cafe, which had purchased from the Julius Levin Company in good faith and which was protected by a pure food guaranty.

Five samples of whiskey labeled "Old Crow Whiskey" and "Genuine Sunny Brook Whiskey" were made from 25 per cent genuine stock with 75 per cent of adulteration, the mixture being artificially colored and flavored.

Two samples were labeled "Jas. Hennessy Three Star Cognac." This stock was made from 25 per cent cognac stock with 75 per cent adulteration.

One sample of Duff Gordon Sherry made from 25 per cent genuine stock and 75 per cent adulteration.

One sample of essence of peppermint, containing less than 0.2 per cent of peppermint oil, whereas it should contain 3 per cent of peppermint oil.

One sample of blackberry brandy which was an imitation product.

Incubator Eggs.

This bureau has recently investigated incubator eggs shipped into the city of San Francisco. Upwards of one hundred and fifty cases of incubator eggs per week are used in this city alone.

These so-called "incubator eggs" are eggs that have been in the incubators three or four days and have been found infertile. Some of them are apparently wholesome if used very soon after being removed from the incubator, but the majority of them are decomposed and they usually spoil very quickly. Such eggs are sold principally to bakers, although a good many are mixed with other eggs for retail trade. These shipments of eggs are found, on candling, to contain from 25 per cent to 75 per cent of bad eggs and while a few of the bad ones are destroyed the majority are used in certain classes of bakers' goods.

This department will continue this investigation throughout the state in an endeavor to stop the shipment and sale of decomposed incubator eggs for edible purposes.

Fire Sale Goods.

Salvage companies continually receive consignments of fire sale and other damaged goods. Nearly every week our inspectors encounter large quantities of groceries and provisions of this class. In some cases the damage is comparatively slight, and in others the goods are entirely unsuitable for human consumption. Certain articles ferment and mold on account of being soaked with water, other articles are rendered inedible by heat and smoke. During the past month this bureau has condemned and caused to be destroyed 3,758 pounds of cereals, pastes and pastry products; 250 pounds of mince meat; 121 cans of assorted spices, pork and beans, baking powder; 547 packages of jello and ice cream thickeners, pickles, etc.; 300 tins of sardines.

Salvage companies will be held responsible for inedible foods found in their possession. Restaurants, bakers and retail grocers who purchase such goods from salvage companies should protect themselves with pure food guaranties, as otherwise they will be held responsible for having such inedible products in their possession.

Articles of Food Condemned Upon Physical and Chemical Examination as Unfit for Food, March, 1917.

Material	Amount	Condition	Locality	Disposition
Baking powder ----	500 lbs.	Damaged by water	San Francisco--	Burned
Oatsup -----	11 bots.	Decomposed -----	San Francisco--	Destroyed
Catsup -----	44 bots.	Decomposed -----	Los Angeles ---	Destroyed
Cereals -----	3,758 lbs.	Damaged by water	San Francisco--	Destroyed
Condiments—				
Welsh Sauce -----	4 bots.	Old, mislabeled --	Merced -----	Destroyed
Mexican Hot -----	9 bots.	Decomposed -----	Los Angeles ---	Destroyed
Currants -----	18 pkgs.	Weevilly -----	Los Angeles ---	Destroyed
Eggs, incubator --	12 doz.	Decomposed -----	San Francisco--	Destroyed
Extracts -----	14 pints	Old, mislabeled --	Merced -----	Destroyed
Fish—				
Anchovies -----	30 tins	Decomposed -----	Los Angeles ---	Destroyed
Herrings -----	10 jars	Decomposed -----	Oakland -----	Destroyed
Herrings -----	43 cans	Decomposed -----	Los Angeles ---	Destroyed
Sardines -----	17 cans	Decomposed -----	Los Angeles ---	Destroyed
Sardines -----	300 tins	Decomposed -----	San Francisco--	Destroyed
Fruit—pie -----	3 cans	Swelled -----	Los Angeles ---	Destroyed
Gelatine -----	50 lbs.	Decomposed -----	San Francisco--	Oiled
Jelly, Orange Glow	12 glasses	Moldy -----	Los Angeles ---	Destroyed
Meat—roast beef --	1 can	Swelled -----	Los Angeles ---	Destroyed
Medicine—patent --	234 bots.	Old, mislabeled ---	San Francisco--	Destroyed
Milk, condensed ---	36 cans	Filthy -----	Colfax -----	Destroyed
Milk, condensed ---	90 cans	Filthy -----	Grass Valley --	Destroyed
Mincemeat -----	250 lbs.	Damaged by fire--	San Francisco--	Oiled
Miscellaneous art- icles of groceries	{ 500 arts. 547 pkgs. 121 cans	} Damaged by fire and water -----	San Francisco--	Destroyed
Nut meats—				
Almonds -----	200 lbs.	Wormy -----	San Francisco--	Denatured
Peanuts -----	53 lbs.	Decomposed -----	San Francisco--	Denatured
Walnuts -----	656 lbs.	Moldy -----	San Francisco--	Denatured
Walnuts -----	405 lbs.	Moldy and rancid	Los Angeles ---	Hog feed
Tomato puree -----	18,816 lbs.	Filthy, decompos'd	Los Angeles ---	Destroyed

Cases Referred to District Attorneys, March 3, 1917.

Name of article	Offense	Accused dealer	Locality
Amer Picon -----	Adulterated and mislabeled; substitution of other materials.	The Avenue Restaurant-----	Oakland
Amer Picon -----	Adulterated and mislabeled; substitution of other materials.	High Street Cafe-----	Oakland
Brandy -----	Adulterated and mislabeled; substitution of other materials.	Pat Kisch, Saddle Rock Cafe-----	Oakland
Brandy -----	Adulterated and mislabeled; substitution of other materials.	The Dock Saloon-----	San Francisco
Brandy, blackberry -----	Adulterated and mislabeled; substitution of other materials.	B. Gere, Saloon-----	San Francisco
Bread, gluten -----	Adulterated and mislabeled; substitution of other materials.	French Bakery, Weitmann & Noceti-----	Sacramento
Butter -----	Mislabeled; short weight-----	American Creamery Co.-----	Oakland
Butter, sweet -----	Mislabeled; short weight-----	American Creamery Co.-----	Oakland
Camphorated oil -----	Adulterated and mislabeled; substitution of other materials.	J. V. Leithold-----	Woodland
Camphorated oil -----	Adulterated and mislabeled; substitution of other materials.	Joy's, Drugs -----	San Francisco
Caramels, pure cream-----	Adulterated and mislabeled; very little, if any pure cream used.	San Francisco Sweet Shop-----	San Francisco
Catsup, tomato -----	Adulterated and mislabeled; filthy and decomposed.	D. J. Canty-----	Oakland
Chopped meat -----	Adulterated; contains sulfur dioxide-----	B. E. Combs-----	Alameda
Chopped meat ¹ -----	Adulterated; contains sulfur dioxide-----	Sacramento Meat and Poultry Market	Sacramento
Cordial, blackberry pure fruit	Adulterated and mislabeled; substitution of other materials.	W. Margulis Co., Inc.-----	San Francisco
Eggs -----	Adulterated and mislabeled; decomposed animal substance.	P. L. Pasqual-----	Oakland
Eggs ¹ -----	Adulterated and mislabeled; decomposed animal substance.	Cudahy Packing Co.-----	Los Angeles
Eggs ¹ -----	Adulterated and mislabeled; decomposed animal substance.	Swift & Co.-----	Los Angeles
Eggs -----	Adulterated and mislabeled; decomposed animal substance.	Miller & Sons-----	Los Angeles
Eggs -----	Adulterated and mislabeled; decomposed animal substance.	S. Rosenthal, Lewis Market-----	Oakland
Gilka Kummel -----	Adulterated and mislabeled; substitution of other materials.	High Street Cafe-----	Oakland

Cases Referred to District Attorneys, March 3, 1917—Continued.

Name of article	Offense	Accused dealer	Locality
Gin -----	Adulterated and mislabeled; substitution of other materials.	Fritz Braemer -----	Alameda
Gin -----	Adulterated and mislabeled; substitution of other materials.	Pier Saloon -----	San Francisco
Gin ¹ -----	Adulterated and mislabeled; substitution of other materials.	Peerless Cafe -----	Sacramento
Gin -----	Adulterated and mislabeled; substitution of other materials.	West Saloon -----	San Francisco
Gin -----	Adulterated and mislabeled; substitution of other materials.	J. F. Mohr, Saloon -----	San Francisco
Gin -----	Adulterated and mislabeled; substitution of other materials.	John Rose, Saloon -----	Walnut Creek
Gin -----	Adulterated and mislabeled; substitution of other materials.	W. S. Burpee, Saloon -----	Walnut Creek
Gin -----	Adulterated and mislabeled; substitution of other materials.	E. F. Thayer Co. -----	Oakland
Grape juice, Jodaco -----	Adulterated and mislabeled; other materials substituted.	The Mart, R. Levy -----	Vallejo
Oil, Young Chong Juck Liam's -----	Mislabeled; extravagant claims on label.	Hong Yau Tong Co. -----	San Francisco
Oysters, canned -----	Adulterated and mislabeled; filthy, decomposed and putrid animal substance.	Smith's Cash Grocery -----	Santa Rosa
Pepper, ground black -----	Adulterated and mislabeled; filthy, decomposed vegetable substance.	Pacific Sales Co., M. Rosenthal -----	Oakland
Spaghetti -----	Adulterated and mislabeled; infested with insects.	Roma Macaroni Co. -----	San Francisco
Syrup, raspberry -----	Mislabeled; artificially colored.	The Avenue Restaurant -----	Oakland
Syrup, raspberry -----	Mislabeled; contains coal tar dye.	Acme Wine and Liquor Co. -----	San Francisco
Sweet Oil -----	Adulterated and mislabeled; contained cottonseed oil.	F. S. Lawhead, corner Drug Store -----	Woodland
Walnut meats -----	Adulterated and mislabeled; filthy, decomposed vegetable substance.	Wasserman & Cohn -----	Los Angeles
Water, mineral -----	Adulterated and mislabeled; claims fraudulent.	Monterey Mineral Springs Sanitarium -----	New Monterey
Whiskey ² -----	Adulterated and mislabeled; other materials substituted.	High Street Cafe -----	Oakland

¹Referred on three counts.²Referred on two counts.

Convictions Under the Pure Food and Drugs Acts During March, 1917.

Name of article	Offense	Accused dealer	Locality	Penalty
Black pepper	Adulterated and mislabeled	M. Rosenthal	Oakland	Fined \$10.00
Brandy	Adulterated and mislabeled	P. Kisich	Oakland	Fined 5.00
Brandy	Adulterated and mislabeled	Dannheim & Neissen	Oakland	Fined 10.00
Cake, pineapple	Adulterated and mislabeled	Jacob Renz	Oakland	O. R. 6 mos.
Camphorated oil	Adulterated and mislabeled	Sobel Drug Co.	Oakland	O. R. 6 mos.
Caramels	Adulterated and mislabeled	S. F. Sweet Shop	San Francisco	Fined \$20.00
Catsup	Adulterated and mislabeled	D. J. Canty	Oakland	Fined 5.00
Chopped meat	Adulterated	B. E. Combs	Alameda	Fined 25.00
Chopped meat	Adulterated	Sacramento Meat and Poultry Co.	Sacramento	Fined 50.00
Cider	Adulterated	G. W. Scougall	Oakland	Fined 5.00
Cognac	Adulterated and mislabeled	Commercial House Bar	San Francisco	Fined 50.00
Creme de menthe	Adulterated and mislabeled	A. J. Wolff	San Francisco	Fined 15.00
Eggs	Adulterated and mislabeled	Fayway Butter Store	Long Beach	Fined 25.00
Eggs	Adulterated and mislabeled	Morris & Co., Inc.	Los Angeles	Fined 30.00
Eggs	Adulterated and mislabeled	Palace Market, Inc.	Los Angeles	Fined 5.00
Eggs	Adulterated and mislabeled	H. K. Hop Kee Co.	San Francisco	Fined 5.00
Eggs	Adulterated and mislabeled	Lun Chong & Co.	San Francisco	Fined 5.00
Eggs	Adulterated and mislabeled	Mow Lee & Co.	San Francisco	Fined 5.00
Eggs	Adulterated and mislabeled	Shing Chong & Co.	San Francisco	Fined 20.00
Eggs	Adulterated and mislabeled	Yick, Lung Kee & Co.	San Francisco	Fined 5.00
Eggs	Adulterated and mislabeled	Sang Wo & Co.	San Francisco	Fined 5.00
Eggs ¹	Adulterated and mislabeled	F. B. Voorhies & Son	San Francisco	O. R. 6 mos.
Eggs	Adulterated and mislabeled	Kung Yuen & Co.	San Francisco	Fined \$5.00
Eggs	Adulterated and mislabeled	Sang Hop & Co.	San Francisco	Fined 5.00
Eggs	Adulterated and mislabeled	Sun Lung & Co.	San Francisco	O. R. 30 days
Eggs	Adulterated and mislabeled	Wing Wah Sing & Co.	San Francisco	Fined \$5.00
Eggs	Adulterated and mislabeled	Shun On Co.	San Francisco	Fined 20.00
Eggs	Adulterated and mislabeled	S. Ypma	Oakland	Fined 5.00
Eggs	Adulterated and mislabeled	R. Kurzner	Oakland	Fined 5.00
Eggs ¹	Adulterated and mislabeled	S. Rosenthal	Oakland	Fined 10.00
Eggs	Adulterated and mislabeled	P. L. Pasqual	Oakland	Fined 5.00
Extract, lemon	Adulterated and mislabeled	Haas, Baruch & Co.	Los Angeles	Fined 60.00
Gilka Kummel	Adulterated and mislabeled	High Street Cafe	Oakland	Fined 10.00
Gin	Adulterated and mislabeled	Clay Ten Bar	Oakland	Fined 5.00
Gin	Adulterated and mislabeled	P. A. Cox, Saloon	Oakland	Fined 5.00
Gin	Adulterated and mislabeled	Hugo Lotzen	San Francisco	Fined 5.00

Convictions Under Pure Food and Drugs Acts During March, 1917—Continued.

Name of article	Offense	Accused dealer	Locality	Penalty
Gin	Adulterated and mislabeled	S. Arena	Oakland	Fined \$10.00
Gin	Adulterated and mislabeled	G. Cuneo	Oakland	Fined 5.00
Gin	Adulterated and mislabeled	Peter Christensen	Oakland	Fined 5.00
Gin	Adulterated and mislabeled	Dannheim & Neissen	Oakland	Fined 5.00
Gin	Adulterated and mislabeled	Fritz Braemer	Alameda	Fined 25.00
Macaroons	Mislabeled	North Sacramento Bakery	Sacramento	Fined 5.00
Peas, canned	Adulterated	Sang Hop & Co.	San Francisco	Fined 10.00
Picon	Adulterated and mislabeled	High Street Cafe	Oakland	Fined 10.00
Picon	Adulterated and mislabeled	Martin Katich	Oakland	Fined 5.00
Syrup, raspberry	Adulterated and mislabeled	Martin Katich	Oakland	Fined 5.00
Tincture iodine	Adulterated and mislabeled	A. A. Shaw	San Francisco	Fined 25.00
Vermouth	Adulterated and mislabeled	J. S. Kovacevich	Oakland	Fined 5.00
Whiskey ¹	Adulterated and mislabeled	High Street Cafe	Oakland	Fined 20.00
Wine	Adulterated and mislabeled	J. S. Kovacevich	Oakland	Fined 5.00

¹Referred on two counts.

REPORT OF BUREAU OF REGISTRATION OF NURSES FOR
APRIL, 1917.

ANNA C. JAMMÉ, Director.

The bureau, since its organization, has continually advocated post-graduate instruction of nurses. Facilities, however, for obtaining this type of instruction have not been available on the Pacific Coast, and in fact not west of Chicago. For this reason it has been expensive and inconvenient for those whose ambition led them to take up further study in special subjects after graduation from a school of nursing, and has deterred others from attempting it.

Now that the standard of instruction has been placed on a better and more secure basis the problem of obtaining sufficient and well prepared nurse instructors may be helped by placing opportunities for study in this particular branch within more easy reach than Chicago or New York.

The administration of a hospital may be considered now a fine art requiring special preparation and close and constant study in order to meet the demands now placed upon hospitals in the care of the sick. Nurses are very frequently placed at the head of hospitals and upon their ability depends the success of the hospital in a financial way and in carrying on efficiently the medical and nursing service.

The advent of the public health nurse as a community servant has brought the problem of special preparation for this important branch of nursing work, which can not be obtained practically in the training school.

In accordance, therefore, with a request of the bureau and with the full cooperation of the Department of Public Health of the University of California a series of courses designed for the instruction of graduate nurses is offered in the summer session of the university. These courses comprise the elements of hospital management, methods of teaching in schools of nursing and of public health nursing. The total amount of credit given at any summer session is six units and time spent on these courses will be credited to the time required for a special public health nurse's certificate.

The bulletin of the Summer Session will be sent to any address upon application to the Dean of the Summer Session, Berkeley, California. The sessions begin on June 25 and close on August 4. No formal examination is required for entrance. The tuition is fifteen dollars, regardless of the number of courses taken.

Following is an outline of the courses and the instructors for each course:

PUBLIC HEALTH—SUMMER SESSION, 1917.

S1. Elementary Bacteriology.

Miss Bradley and Miss Stevens.

An introductory laboratory course in bacteriology, including preparation of culture media, isolation of organisms, and the methods of studying them. Some of the commoner diseases producing bacteria will be considered briefly.

M., Tu., W., Th., F., 1-5. 3 units.

3. Hospital Administration.

Dr. Dorr.

The various phases of hospital management, such as planning and equipment, service, costs, purchasing, and supervision of departments. Lectures. In addition to the regular class meetings, there will be required at least six hours per week of outside study.

Tu., Th., 11. 1 unit.

S5. Emergencies and Home Care of the Sick.

Dr. Gompertz.

Lectures for women on common emergencies, with practical demonstrations and exercises.

M., Tu., W., Th., F., 8. 2 units.

S7. First Aid.

Dr. McVey.

A course for men engaged in school, playground, and industrial pursuits on the recognition of common emergencies, with practical exercises in bandaging, application of splints, artificial respiration, and the transportation of the injured.

M., Tu., W., Th., F., 8. 1 unit.

9. Methods of Teaching in Schools of Nursing.

Miss Pope.

Methods of presentation of the subjects in the training school curriculum. Lesson plans, material for demonstration, and the choice of textbooks will be considered.

M., Tu., Th., 10. 1 unit.

10. Essentials of Public Health. *Assistant Professor Force and Miss Stevens.*

Lectures and laboratory exercises on the control of communicable diseases, child hygiene, and general sanitation.

Lectures, M., 8, F., 9; laboratory exercises, M., 9-11, Tu., Th., 8-10. 2 units.

12. Principles and Practice of Public Health Visiting.

Miss Evans.

Lectures and field exercises in health visiting. The course will consider the organization and administration of health visiting work, the functions of health authorities, laws relating to the public health, school nursing, infant welfare, and rural health problems.

Lecture, W., 8; field exercises, W., 9-12, 1-4, Th., F., 1-4. 2 units.

Dietetics for Health Visitors (see Household Science 2).

Assistant Professor Morgan.

Household Science 2: Dietetics for Public Health Visitors.

The essential facts concerning chemical, fuel, hygienic, and economic standards of food; the methods of estimating kind and quantity of food required under varying conditions; the adequate feeding of families at low cost; the simplest facts about infant feeding. Designed for nurses and others who intend to become public health visitors. Laboratory fee, \$2.

Lectures, Tu., Th., F., 10; laboratory, M., Tu., 1-3.

201. Research.

Assistant Professor Force and Miss Stevens.

The Laboratory of Hygiene will be open during the Summer Session for research by properly qualified students. Hours and credits to be arranged.